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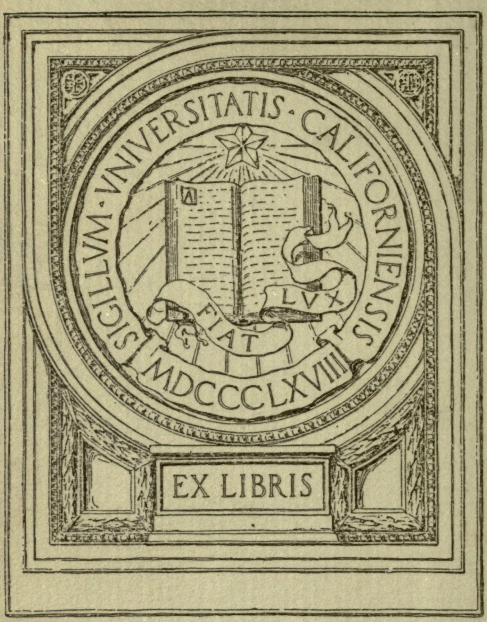
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THE

NATURAL HISTORY

OF

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TRANSLATED,

WITH COPIOUS NOTES AND ILLUSTRATIONS

BY THE LATE

JOHN BOSTOCK, M.D., F.R.S.,

AND

H. T. RILEY, Esq., B.A.,

LATE SCHOLAR OF CLARE HALL, CAMBRIDGE.

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NATURAL HISTORY OF PLINY.

BOOK XVIII.

THE NATURAL HISTORY OF GRAIN.

CHAP. 1. (1.)—TASTE OF THE ANCIENTS FOR AGRICULTURE.

We now pass on to the Natural History of the various grains, of the garden plants and flowers, and indeed of all the other productions, with the exception of the trees and shrubs, which the Earth, in her bounteousness, affords us—a boundless field for contemplation, if even we regard the herbs alone, when we take into consideration the varieties of them, their numbers, the flowers they produce, their odours, their colours, their juices, and the numerous properties they possess—all of which have been engendered by her with a view to either the preservation or the gratification of the human race.

On entering, however, upon this branch of my subject, it is my wish in the first place to plead the cause of the Earth, and to act as the advocate of her who is the common parent of all, although in the earlier[1] part of this work I have already had occasion to speak in her defence. For my subject matter, as I proceed in the fulfilment of my task, will now lead me to consider her in the light of being the producer of various noxious substances as well; in consequence of which it is that we are in the habit of charging her with our crimes, and imputing to her a guilt that is our own. She has produced poisons, it is true; but who is it but man that has found them out? For the birds of the air and the beasts of the field, it is sufficient to be on their guard against them, and to keep at a distance from them. The elephant, we find, and the urus, know how to

[1] In B. ii. c. 63.

sharpen[2] and renovate their teeth against the trunks of trees, and the rhinoceros against rocks; wild boars, again, point their tusks like so many poniards by the aid of both rocks and trees; and all animals, in fact, are aware how to prepare themselves for the infliction of injury upon others; but still, which is there among them all, with the exception of man, that dips his weapons in poison? As for ourselves, we envenom the point of the arrow,[3] and we contrive to add to the destructive powers of iron itself; by the aid of poisons we taint the waters of the stream, and we infect the various elements of Nature; indeed, the very air even, which is the main support of life, we turn into a medium for the destruction of life.

And it is not that we are to suppose that animals are ignorant of these means of defence, for we have already had occasion to point out[4] the preparations which they make against the attacks of the serpent, and the methods they devise for effecting a cure when wounded by it; and yet, among them all, there is not one that fights by the aid of the poison that belongs to another, with the sole exception of man. Let us then candidly confess our guilt, we who are not contented even with the poisons as Nature has produced them; for by far the greater portion of them, in fact, are artificially prepared by the human hand!

And then besides, is it not the fact, that there are many men, the very existence of whom is a baneful poison, as it were? Like that of the serpent, they dart their livid tongue, and the venom of their disposition corrodes every object upon which it concentrates itself. Ever vilifying and maligning, like the ill-omened birds of the night, they disturb the repose of that darkness which is so peculiarly their own, and break in upon the quiet of the night even, by their moans and wailings, the only sounds they are ever heard to emit. Like animals of inauspicious presage, they only cross our path to

[2] Of course this is only mere declamation; it is not probable that the animals have any notion at all of *sharpening* the weapons that nature has given; in addition to which, this mode of sharpening them against hard substances would only wear away the enamel, and ultimately destroy them. The acts of animals in a moment of rage or frenzy have evidently been mistaken here for the dictates of instinct, or even a superior intelligence.

[3] See B. xxv. c. 25, and B. xxvii. c. 76.

[4] In B. viii. c. 36. 41, 42. The works of the ancients, Fée remarks, are full of these puerilities.

prevent us from employing our energies or becoming useful to our fellow-men; and the only enjoyment that is sought by their abominable aspirations is centred in their universal hatred of mankind.

Still, however, even in this respect Nature has asserted her majestic sway; for how much more numerous[5] are the good and estimable characters which she has produced! just in the same proportion that we find her giving birth to productions which are at once both salutary and nutritious to man. It is in our high esteem for men such as these, and the commendations they bestow, that we shall be content to leave the others, like so many brakes and brambles, to the devouring flames of their own bad passions, and to persist in promoting the welfare of the human race; and this, with all the more energy and perseverance, from the circumstance that it has been our object throughout, rather to produce a work of lasting utility than to ensure ourselves a widely-spread renown. We have only to speak, it is true, of the fields and of rustic operations; but still, it is upon these that the enjoyment of life so materially depends, and that the ancients conferred the very highest rank in their honours and commendations.

CHAP. 2. (2.)—WHEN THE FIRST WREATHS OF CORN WERE USED AT ROME.

Romulus was the first who established the Arval[6] priesthood at Rome. This order consisted of the eleven sons of Acca Larentia, his nurse,[7] together with Romulus himself, who assumed the appellation of the twelfth of the brotherhood. Upon this priesthood he bestowed, as being the most august distinction that he could confer upon it, a wreath of ears of corn, tied together with a white fillet; and this, in fact, was the first chaplet that was ever used at Rome. This dignity is only ended with life itself, and whether in exile or in captivity, it

[5] This sentiment is not at all akin to the melancholy view which our author takes of mankind at the beginning of B. vii. and in other parts of this work. It is not improbable that his censures here are levelled against some who had endeavoured to impede him in the progress of his work.

[6] "Arvorum sacerdotes," the priests of the fields.

[7] Or foster-mother. It has been suggested that the Rogations of the Roman church may have possibly originated in the Ambarvalia, or ceremonial presided over by the Arval priesthood.

always attends its owner. In those early days, two jugera of land were considered enough for a citizen of Rome, and to none was a larger portion than this allotted. And yet, at the present day, men who but lately were the slaves of the Emperor Nero have been hardly content with pleasure-gardens that occupied the same space as this; while they must have fishponds, forsooth, of still greater extent, and in some instances I might add, perhaps, kitchens even as well.

Numa first established the custom of offering corn to the gods, and of propitiating them with the salted[8] cake; he was the first, too, as we learn from Hemina, to parch spelt, from the fact that, when in this state, it is more wholesome as an aliment.[9] This method, however, he could only establish one way: by making an enactment, to the effect that spelt is not in a pure state for offering, except when parched. He it was, too, who instituted the Fornacalia,[10] festivals appropriated for the parching of corn, and others,[11] observed with equal solemnity, for the erection and preservation of the "termini," or boundaries of the fields: for these termini, in those days, they particularly regarded as gods; while to other divinities they gave the names of Seia,[12] from "sero," "to sow," and of Segesta, from the "segetes," or "crops of standing corn," the statues of which goddesses we still see erected in the Circus. A third divinity it is forbidden by the rules of our religion to name even[13] beneath a roof. In former days, too, they would not so much as taste the corn when newly cut, nor yet wine when just made, before the priests had made a libation of the first-fruits.

CHAP. 3. (3.)—THE JUGERUM OF LAND.

That portion of land used to be known as a "jugerum,"

[8] Made of salt and the meal or flour of spelt. Salt was the emblem of wisdom, friendship, and other virtues.

[9] This, Fée observes, is not the case with any kind of wheat; with manioc, which has an acrid principle, the process may be necessary, in order to make it fit for food.

[10] Or Feast of the Furnace or Oven. See Ovid's Fasti, B. ii. l. 5—25.

[11] Called the Terminalia. See Ovid's Fasti, B. ii. l. 641, *et seq.*

[12] Tertullian, De Spect. i. 16, calls this goddess by the name of Sessia.

[13] Cœlius Rhodiginus, Turnebus, and Vossius, conjecture that the name of this goddess, who might only be named in the field, was Tutelina. Hardouin thinks that it was Segesta, here mentioned.

which was capable of being ploughed by a single "jugum," or yoke of oxen, in one day; an "actus"[14] being as much as the oxen could plough at a single spell, fairly estimated, without stopping. This last was one hundred and twenty feet in length; and two in length made a jugerum. The most considerable recompense that could be bestowed upon generals and valiant citizens, was the utmost extent of land around which a person could trace a furrow with the plough in a single day. The whole population, too, used to contribute a quarter[15] of a sextarius of spelt, or else half a one, per head.

From agriculture the earliest surnames were derived. Thus, for instance, the name of Pilumnus was given to him who invented the "pilum," or pestle of the bake-house, for pounding corn; that of Piso was derived from "piso," to grind corn; and those of Fabius, Lentulus, and Cicero, from the several varieties[16] of leguminous plants in the cultivation of which respectively these individuals excelled. One individual of the family of the Junii received the name of "Bubulcus,"[17] from the skill he displayed in breeding oxen. Among the sacred ceremonials, too, there was nothing that was held more holy than the marriage by confarreation,[18] and the woman just married used to present a cake made of spelt.[19] Careless cultivation of the land was in those times an offence that came under the cognizance of the censors; and, as we learn from Cato,[20] when it was said that such and such a man was a good agriculturist or a good husbandman, it was looked upon as the very highest compliment that could be paid him. A man came to be called "locuples," or "rich," from being "loci plenus," or "full of earth." Money, too, received its name of "pecunia,"[21] from "pecus," "cattle." At the present

[14] Four Roman feet in width, and 120 in length.

[15] Quartarius.

[16] "Faba," a bean; "Lens," a lentil; and "Cicer," a chick-pea.

[17] A "bubus," from "oxen." Caius Junius Bubulcus was twice Consul, and once Master of the Horse.

[18] "Farreum" was a form of marriage, in which certain words were used, in presence of ten witnesses, and were accompanied by a certain religious ceremony, in which "panis farreus" was employed; hence this form of marriage was called "confarreatio."

[19] Farreum.

[20] De Re Rust. Preface.

[21] See B. xxxiii. c. 13.

day, even, in the registers of the censors, we find set down under the head of "pascua," or "pasture lands," everything from which the public revenues are derived, from the fact that for a long period of time pasture lands were the only sources of the public revenue. Fines, too, were only imposed in the shape of paying so many sheep or so many oxen; and the benevolent spirit of the ancient laws deserves remark, which most considerately enjoined that the magistrate, when he inflicted a penalty, should never impose a fine of an ox before having first condemned the same party to the payment of a sheep.

Those who celebrated the public games in honour of the ox received the name of Bubetii.[22] King Servius was the first who impressed upon our copper coin[23] the figures of sheep and oxen. To depasture cattle secretly by night upon the unripe crops on plough lands, or to cut them in that state, was made by the Twelve Tables[24] a capital offence in the case of an adult; and it was enacted that the person guilty of it should be hanged, in order to make due reparation to the goddess Ceres, a punishment more severe, even, than that inflicted for murder. If, on the other hand, the offender was not an adult, he was beaten at the discretion of the prætor; a penalty double the amount of the damage was also exacted.

The various ranks, too, and distinctions in the state had no other origin than the pursuits of agriculture. The rural tribes held the foremost rank, and were composed of those who possessed lands; while those of the city, a place to which it was looked upon as ignominious to be transferred, had the discredit thrown upon them of being an indolent race. Hence it was that these last were only four in number, and received their names from the several parts of the City which they respectively inhabited; being the Suburran, the Palatine, Colline, and Exquiline tribes. Every ninth day[25] the rural tribes used to visit the city for the purpose of marketing, and it was for this reason that it was made illegal to hold the comitia upon

[22] St Augustin, De Civ. Dei., mentions a goddess, Bubona, the tutelar divinity of oxen. Nothing seems to be known of these games.

[23] See B. xxxiii. c. 13. Macrobius says that it was Janus.

[24] Table vii. s. 2.

[25] On the "Nundinæ," or ninth-day holiday: similar to our market-days. According to *our* mode of reckoning, it was every *eighth* day.

the Nundinæ; the object being that the country people might not be called away thereby from the transaction of their business. In those days repose and sleep were enjoyed upon straw. Even to glory itself, in compliment to corn, the name was given of "adorea."[26]

For my own part, I greatly admire[27] the modes of expression employed in our ancient language: thus, for instance, we read in the Commentaries of the Priesthood to the following effect:—"For deriving an augury from the sacrifice of a bitch,[28] a day should be set apart before the ear of corn appears from out of the sheath,[29] and then again before it enters the sheath."

CHAP. 4.—HOW OFTEN AND ON WHAT OCCASIONS CORN HAS SOLD AT A REMARKABLY LOW PRICE.

The consequence was, that when the Roman manners were such as these, the corn that Italy produced was sufficient for its wants, and it had to be indebted to no province for its food; and not only this, but the price of provisions was incredibly cheap. Manius Marcius, the ædile[30] of the people, was the first who gave corn to the people at the price of one as for the modius. L. Minutius Augurinus,[31] the same who detected, when eleventh tribune of the people, the projects of Spurius Mælius, reduced the price of corn on three market days,[32] to one as per modius; for which reason a statue was erected in honour of him, by public subscription, without the Trigeminian Gate.[33] T. Seius distributed corn to the people,

[26] From "ador," the old name for "spelt:" because corn was the chief reward given to the conqueror, and his temples were graced with a wreath of corn.

[27] In the first place, it is difficult to see what there is in this passage to admire, or "wonder at," if that is the meaning of "admiror;" and then, besides, it has no connection with the context. The text is probably in a defective state.

[28] See c. 69 of this Book.

[29] "Vagina." The meaning of this word here has not been exactly ascertained. It has been suggested that the first period alludes to the appearance of the stalk from its sheath of leaves, and the second to the formation of the ear.

[30] A.U.C. 298.

[31] See B. xxxiv. c. 11. A.U.C. 317.

[32] Nundinis.

[33] On the road to Ostia. It was said to have received its name from the Horatii and Curiatii.

in his ædileship,[34] at one as per modius, in remembrance of which statues were erected in honour of him also in the Capitol and the Palatium: on the day of his funeral he was borne to the pile on the shoulders of the Roman people. In the year,[35] too, in which the Mother of the Gods was brought to Rome, the harvest of that summer, it is said, was more abundant than it had been for ten years before. M. Varro informs us, that in the year[36] in which L. Metellus exhibited so many elephants in his triumphal procession, a modius of spelt was sold for one as, which was the standard price also of a congius of wine, thirty pounds' weight of dried figs, ten pounds of olive oil, and twelve pounds of flesh meat. Nor did this cheapness originate in the wide-spread domains of individuals encroaching continually upon their neighbours, for by a law proposed by Licinius Stolo, the landed property of each individual was limited to five hundred jugera; and he himself was convicted under his own law of being the owner of more than that amount, having as a disguise prevailed upon his son to lend him his name. Such were the prices of commodities at a time when the fortunes of the republic were rapidly on the increase. The words, too, that were uttered by Manius Curius[37] after his triumphs and the addition of an immense extent of territory to the Roman sway, are well known: "The man must be looked upon," said he, "as a dangerous citizen, for whom seven jugera of land are not enough;" such being the amount of land that had been allotted to the people after the expulsion of the kings.

What, then, was the cause of a fertility so remarkable as this? The fact, we have every reason to believe, that in those days the lands were tilled by the hands of generals even, the soil exulting beneath a plough-share crowned with wreaths of laurel, and guided by a husbandman graced with triumphs: whether it is that they tended the seed with the same care that they had displayed in the conduct of wars, and manifested the same diligent attention in the management of their fields that they had done in the arrangement of the camp,

[34] A.U.C. 345.

[35] A.U.C. 550. He alludes to the introduction of Cybele, from Pessinus, in Galatia, in the Second Punic war.

[36] A.U.C. 604. See B. viii. c. 6.

[37] Manius Curius Dentatus, Consul A.U.C. 464.

or whether it is that under the hands of honest men everything prospers all the better, from being attended to with a scrupulous exactness. The honours awarded to Serranus[38] found him engaged in sowing his fields, a circumstance to which he owes his surname.[39] Cincinnatus was ploughing his four jugera of land upon the Vaticanian Hill—the same that are still known as the "Quintian Meadows,"[40] when the messenger brought him the dictatorship—finding him, the tradition says, stripped to the work, and his very face begrimed with dust. "Put on your clothes," said he, "that I may deliver to you the mandates of the senate and people of Rome." In those days these messengers bore the name of "viator," or "wayfarer," from the circumstance that their usual employment was to fetch the senators and generals from their fields.

But at the present day these same lands are tilled by slaves whose legs are in chains, by the hands of malefactors and men with a branded face! And yet the Earth is not deaf to our adjurations, when we address her by the name of "parent," and say that she receives our homage[41] in being tilled by hands such as these; as though, forsooth, we ought not to believe that she is reluctant and indignant at being tended in such a manner as this! Indeed, ought we to feel any surprise were the recompense she gives us when worked by chastised slaves,[42] not the same that she used to bestow upon the labours of warriors?

CHAP. 5. — ILLUSTRIOUS MEN WHO HAVE WRITTEN UPON AGRICULTURE.

Hence it was that to give precepts upon agriculture became one of the principal occupations among men of the highest rank, and that in foreign nations even. For among those who

[38] A.U.C. 497.

[39] From "sero," to sow. See the Æneid, B. vi. l. 844, where this circumstance is alluded to.

[40] "Prata Quintia." Hardouin says that in his time this spot was still called *I Prati:* it lay beyond the Tiber, between the vineyard of the Medici and the castle of Sant Angelo.

[41] He alludes to the twofold meaning of the word "coli," "to be tilled," or "to receive homage from."

[42] "Ergastulorum." The "Ergastula" were places of punishment attached to the country houses of the wealthy, for the chastisement of refractory slaves, who were usually made to work in chains.

have written on this subject we find the names of kings even, Hiero, for instance, Attalus Philometor, and Archelaüs, as well as of generals, Xenophon, for example, and Mago the Carthaginian. Indeed, to this last writer did the Roman senate award such high honours, that, after the capture of Carthage, when it bestowed the libraries of that city upon the petty kings of Africa, it gave orders, in his case only, that his thirty-two Books should be translated into the Latin language, and this, although M. Cato had already compiled his Book of Precepts; it took every care also to entrust the execution of this task to men who were well versed in the Carthaginian tongue, among whom was pre-eminent D. Silanus, a member of one of the most illustrious families of Rome. I have already indicated,[43] at the commencement of this work, the numerous learned authors and writers in verse, together with other illustrious men, whose authority it is my intention to follow; but among the number I may here more particularly distinguish M. Varro, who, at the advanced age of eighty-eight years, thought it his duty to publish a treatise upon this subject.

(4.) Among the Romans the cultivation of the vine was introduced at a comparatively recent period, and at first, as indeed they were obliged to do, they paid their sole attention to the culture of the fields. The various methods of cultivating the land will now be our subject; and they shall be treated of by us in no ordinary or superficial manner, but in the same spirit in which we have hitherto written; enquiry shall be made with every care first into the usages of ancient days, and then into the discoveries of more recent times, our attention being devoted alike to the primary causes of these operations, and the reasons upon which they are respectively based. We shall make mention,[44] too, of the various constellations, and of the several indications which, beyond all doubt, they afford to the earth; and the more so, from the fact that those writers who have hitherto treated of them with any degree of exactness, seem to have written their works for the use of any class of men but the agriculturist.

[43] In the First Book, as originally written. This list of writers is appended in the present Translation to each respective Book.

[44] This is probably written in humble imitation of the splendid exordium of the Georgics of Virgil.

CHAP. 6.—POINTS TO BE OBSERVED IN BUYING LAND.

First of all, then, I shall proceed in a great measure according to the dicta of the oracles of agriculture; for there is no branch of practical life in which we find them more numerous or more unerring. And why should we not view in the light of oracles those precepts which have been tested by the infallibility of time and the truthfulness of experience?

(5.) To make a beginning, then, with Cato[45]—"The agricultural population," says he, "produces the bravest men, the most valiant soldiers,[46] and a class of citizens the least given of all to evil designs.—Do not be too eager in buying a farm.—In rural operations never be sparing of your trouble, and, above all, when you are purchasing land.—A bad bargain is always a ground for repentance.—Those who are about to purchase land, should always have an eye more particularly to the water there, the roads, and the neighbourhood." Each of these points is susceptible of a very extended explanation, and replete with undoubted truths. Cato[47] recommends, too, that an eye should be given to the people in the neighbourhood, to see how they look: "For where the land is good," says he, "the people will look well-conditioned and healthy."

Atilius Regulus, the same who was twice consul in the Punic War, used to say[48] that a person should neither buy an unhealthy piece of land in the most fertile locality, nor yet the very healthiest spot if in a barren country. The salubrity of land, however, is not always to be judged of from the looks of the inhabitants, for those who are well-seasoned are able to withstand the effects of living in pestilent localities even. And then, besides, there are some localities that are healthy during certain periods of the year only; though, in reality, there is no soil that can be looked upon as really valuable that is not healthy all the year through. "That[49] is sure to be bad land against which its owner has a continual struggle." Cato recommends us before everything, to see that the land which

[45] De Re Rust. Preface.

[46] Fée remarks, that we still recruit our armies mostly from the agricultural class.

[47] De Re Rust. c. 1.

[48] Quoted by Columella, De Re Rust. B. i. 4. The sad fate of Regulus is known to all readers of Roman history.

[49] From Columella, B. i. c. 3.

we are about to purchase not only excels in the advantages of locality, as already stated, but is really good of itself. We should see, too, he says, that there is an abundance of manual labour in the neighbourhood, as well as a thriving town; that there are either rivers or roads, to facilitate the carriage of the produce; that the buildings upon the land are substantially erected, and that the land itself bears every mark of having been carefully tilled—a point upon which I find that many persons are greatly mistaken, as they are apt to imagine that the negligence of the previous owner is greatly to the purchaser's advantage; while the fact is, that there is nothing more expensive than the cultivation of a neglected soil.

For this reason it is that Cato[50] says that it is best to buy land of a careful proprietor, and that the methods adopted by others ought not to be hastily rejected—that it is the same with land as with mankind—however great the proceeds, if at the same time it is lavish and extravagant, there will be no great profits left. Cato looks upon a vineyard as the most[51] profitable investment; and he is far from wrong in that opinion, seeing that he takes such particular care to retrench all superfluous expenses. In the second rank he places gardens that have a good supply of water, and with good reason, too, supposing always that they are near a town. The ancients gave to meadow lands the name of "parata," or lands "always ready."[52]

Cato being asked, on one occasion, what was the most certain source of profit, "Good pasture land," was his answer; upon which, enquiry was made what was the next best. "Pretty good[53] pasture lands," said he—the amount of all which is, that he looked upon that as the most certain source of income which stands in need of the smallest outlay. This, however, will naturally vary in degree, according to the nature of the respective localities; and the same is the case with the maxim[54] to which he gives utterance, that a good agriculturist must be

[50] De Re Rust. c. 1.

[51] It is still thought so in France, Fée says, and nothing has tended more than this notion to the depreciation of the prices of wine.

[52] Hence the usual Latin name, "prata."

[53] "Si sat bene." Cicero, De Officiis, B. ii. n. 88, gives this anecdote somewhat more at length.

[54] De Re Rust. c. 2.

fond of selling. The same, too, with his remark, that in his youth a landowner should begin to plant without delay, but that he ought not to build until the land is fully brought into cultivation, and then only a little at a time: and that the best plan is, as the common proverb has it, "To profit by the folly of others;"[55] taking due care, however, that the keeping up of a farm-house does not entail too much expense. Still, however, those persons are guilty of no falsehood who are in the habit of saying that a proprietor who is well housed comes all the oftener to his fields, and that "the master's forehead is of more use than his back."[56]

CHAP. 7. (6.)—THE PROPER ARRANGEMENTS FOR A FARM-HOUSE.

The proper plan to be pursued is this:[57] the farm-house must not be unsuitable for the farm, nor the farm for the house; and we must be on our guard against following the examples of L. Lucullus and Q. Scævola, who, though living in the same age, fell into the two opposite extremes; for whereas the farm-house of Scævola was not large enough for the produce of his farm, the farm of Lucullus was not sufficiently large for the house he built upon it; an error which gave occasion to the reproof of the censors, that on his farm there was less of ground for ploughing than of floor for sweeping. The proper arrangements for a farm-house are not to be made without a certain degree of skill. C. Marius, who was seven times consul, was the last person who had one built at Misenum;[58] but he erected it with such a degree of that artistic skill which he had displayed in castrametation, that Sylla Felix[59] even made the remark, that in comparison with Marius, all the others had been no better than blind.[60]

It is generally agreed, that a farm-house ought neither to be built near a marsh, nor with a river in front of it; for, as

[55] "Alienâ insaniâ frui." We have a saying to a similar effect: "Fools build houses, and wise men buy them."

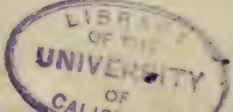
[56] "Frons domini plus prodest quam occipitium." See Cato, De Re Rust. c. 4; also Phædrus, B. iv. Fab. 19.

[57] Cato, c. 3. Varro and Columella give the same advice.

[58] See B. iii. c. 9.

[59] Sylla the Fortunate, the implacable enemy of Marius.

[60] Because, though the last comer, he had obtained the best site in the locality.



Homer[61] has remarked, with the greatest correctness, unwholesome vapours are always exhaled from rivers before the rising of the sun. In hot localities, a farm-house should have a northern aspect, but where it is cold, it should look towards the south; where, on the other hand, the site is temperate, the house should look due east. Although, when speaking[62] of the best kinds of soil, I may seem to have sufficiently discussed the characteristics by which it may be known, I shall take the present opportunity of adding a few more indications, employing the words of Cato[63] more particularly for the purpose. "The dwarf-elder," says he, "the wild plum,[64] the bramble, the small bulb,[65] trefoil, meadow grass,[66] the quercus, and the wild pear and wild apple, are all of them indicative of a corn land. The same is the case, too, where the land is black, or of an ashy colour. All chalky soils are scorching, unless they are very thin; the same, too, with sand, unless it is remarkably fine. These remarks, however, are more applicable to champaign localities than declivities."

The ancients were of opinion, that before everything, moderation should be observed in the extent of a farm; for it was a favourite maxim of theirs, that we ought to sow the less, and plough the more: such too, I find, was the opinion entertained by Virgil,[67] and indeed, if we must confess the truth, it is the wide-spread domains that have been the ruin[68] of Italy, and soon will be that of the provinces as well. Six proprietors were in possession of one half of Africa,[69] at the period when

[61] Od. v. 469. If the river has a bed of sand and high banks, it is really advantageous than otherwise.

[62] In B. xvii. c. 3.

[63] Not to be found in his works which have come down to us.

[64] Prunus spinosa of Linnæus.

[65] See B. xix. c. 30; probably one of the genus Allium sphærocephalum of Linnæus.

[66] "Herba pratensis." It is not known with certainty to what plant he alludes. Fée suggests that it may be the Poa pratensis, or else a phleum, alopecurus, or dactylis. All the plants here mentioned by Pliny will thrive in a calcareous soil, and their presence, as Fée remarks, is of bad augury.

[67] He alludes to the famous maxim in the Georgics, B. ii. l. 412:—

———— Laudato ingentia rura,
Exiguum colito————

"Praise a large farm, cultivate a small one."

[68] By introducing slovenly cultivation.

[69] That small part of it known to the Romans. Hardouin says that the province of Zeugitana is alluded to, mentioned in B. v. c. 3.

the Emperor Nero had them put to death. With that greatness of mind which was so peculiarly his own, and of which he ought not to lose the credit, Cneius Pompeius would never purchase the lands that belonged to a neighbour. Mago has stated it as his opinion, that a person, on buying a farm, ought at once to sell his town house;[70] an opinion, however, which savours of too great rigidity, and is by no means conformable to the public good. It is with these words, indeed, that he begins his precepts; a good proof, at all events, that he looks upon the personal inspection of the owner as of primary importance.

The next point which requires our care is to employ a farm-steward[71] of experience, and upon this, too, Cato[72] has given many useful precepts. Still, however, it must suffice for me to say that the steward ought to be a man nearly as clever as his master, though without appearing to know it. It is the very worst plan of all, to have land tilled by slaves let loose from the houses of correction, as, indeed, is the case with all work entrusted to men who live without hope. I may possibly appear guilty of some degree of rashness in making mention of a maxim of the ancients, which will very probably be looked upon as quite incredible—"That nothing is so disadvantageous as to cultivate land in the highest style of perfection." L. Tarius Rufus, a man who, born in the very lowest ranks of life, by his military talents finally attained the consulship,[73] and who in other respects adhered to the old-fashioned notions of thriftiness, made away with about one hundred millions of sesterces, which, by the liberality of the late Emperor Augustus, he had contrived to amass, in buying up lands in Picenum, and cultivating them in the highest style, his object being to gain a name thereby; the consequence of which was, that his heir renounced[74] the inheritance. Are we of opinion, then, that ruin and starvation must be the necessary consequence of such a course as this? Yes, by Hercules! and the very best plan of all is to let moderation guide our judgment in all things. To cultivate land well is absolutely necessary, but to cultivate

[70] And reside on the farm.

[71] Villicus.

[72] De Re Rust. c. 5.

[73] A.U.C. 737.

[74] Probably because it entailed too great an expense. It may have been deeply mortgaged: otherwise it is not clear why the heir refused to take it, as he might have sold a part.

it in the very highest style is mere extravagance, unless, indeed, the work is done by the hands of a man's own family, his tenants, or those whom he is obliged to keep at any rate. But besides this, even when the owner tills the land itself, there are some crops which it is really not worth the while to gather, if we only take into account the manual labour expended upon them. The olive, too, should never be too highly[75] cultivated, nor must certain soils, it is said, be too carefully tilled, those of Sicily,[76] for instance; hence it is, that new comers there so often find themselves deceived.[77]

CHAP. 8.—MAXIMS OF THE ANCIENTS ON AGRICULTURE.

In what way, then, can land be most profitably cultivated? Why, in the words of our agricultural oracles, "by making good out of bad." But here it is only right that we should say a word in justification of our forefathers, who in their precepts on this subject had nothing else in view but the benefit of mankind: for when they use the term "bad" here, they only mean to say that which costs the smallest amount of money. The principal object with them was in all cases to cut down expenses to the lowest possible sum; and it was in this spirit that they made the enactments which pronounced it criminal for a person who had enjoyed a triumph, to be in possession, among his other furniture, of ten pounds' weight of silver plate: which permitted a man, upon the death of his farm-steward, to abandon all his victories, and return to the cultivation of his lands—such being the men the culture of whose farms the state used to take upon itself; and thus, while they led our armies, did the senate act as their steward.

It was in the same spirit, too, that those oracles of ours have given utterance to these other precepts, to the effect that he is a bad agriculturist who has to buy what his farm might have supplied him with; that the man is a bad manager who does in the day-time what he might have done in the night, except, indeed, when the state of the weather does not allow

[75] He means to say that it is so much labour lost, as it will take care of itself; but this is hardly in accordance with his numerous directions given in B. xv. Virgil, Geor. B. ii. 421, *et seq.*, speaks of the olive as requiring no attention when it has once taken root.

[76] See B. xvii. c. 3.

[77] In throwing away money and labour upon land that does not require it.

it; that he is a worse manager still, who does on a work-day what he might have done on a feast-day;[78] but that he is the very worst of all, who works under cover in fine weather, instead of labouring in the fields.

I cannot refrain from taking the present opportunity of quoting one illustration afforded us by ancient times, from which it will be found that it was the usage in those days to bring before the people even questions connected with the various methods employed in agriculture, and will be seen in what way men were accustomed to speak out in their own defence. C. Furius Chresimus, a freedman, having found himself able, from a very small piece of land, to raise far more abundant harvests than his neighbours could from the largest farms, became the object of very considerable jealousy among them, and was accordingly accused of enticing away the crops of others by the practice of sorcery. Upon this, a day was named by Spurius Calvinus, the curule ædile, for his appearance. Apprehensive of being condemned, when the question came to be put to the vote among the tribes, he had all his implements of husbandry brought into the Forum, together with his farm servants, robust, well-conditioned, and well-clad people, Piso says. The iron tools were of first-rate quality, the mattocks were stout and strong, the plough-shares ponderous and substantial, and the oxen sleek and in prime condition. When all this had been done, "Here, Roman citizens," said he, "are my implements of magic; but it is impossible for me to exhibit to your view, or to bring into this Forum, those midnight toils of mine, those early watchings, those sweats, and those fatigues." Upon this, by the unanimous voice of the people, he was immediately acquitted. Agriculture, in fact, depends upon the expenditure of labour and exertion; and hence it is that the ancients were in the habit of saying, that it is the eye of the master that does more towards fertilizing a field than anything else.

We shall give the rest of these precepts in their appropriate places, according as we find them adapted to each variety of cultivation; but in the meantime we must not omit some of a general nature, which here recur to our recollection, and more

[78] Virgil, Georg. I. 268, *et seq.*, speaks of the work that might be done on feast days—making hedges, for instance, irrigating land, catching birds, washing sheep, and burning weeds.

particularly that maxim of Cato, as profitable as it is humane: "Always act in such a way as to secure the love of your neighbours." He then proceeds to state his reasons for giving this advice, but it appears to me that no one surely can entertain the slightest doubt upon the subject. One of the very first recommendations that he gives is to take every care that the farm servants are kept in good condition.[79] It is a maxim universally agreed upon in agriculture, that nothing must be done too late; and again, that everything must be done at its proper season; while there is a third precept, which reminds us that opportunities lost can never be regained. The malediction uttered by Cato against rotten ground has been treated of at some length already;[80] but there is another precept which he is never tired of repeating, "Whatever can be done by the help of the ass, will cost the least money."

Fern will be sure to die at the end of a couple of years, if you prevent it from putting forth leaves; the most efficient method of ensuring this is to beat the branches with a stick while they are in bud; for then the juices that drop from it will kill the roots.[81] It is said, too, that fern will not spring up again if it is pulled up by the roots about the turn of the summer solstice, or if the stalks are cut with the edge of a reed, or if it is turned up with a plough-share with a reed placed[82] upon it. In the same way, too, we are told that reeds may be effectually ploughed up, if care is taken to place a stalk of fern upon the share. A field infested with rushes should be turned up with the spade, or, if the locality is stony, with a two-pronged mattock: overgrown shrubs are best removed by fire. Where ground is too moist, it is an advantageous plan to cut trenches in it and so drain it; where the soil is cretaceous, these trenches should be left open; and where it is loose, they should be strengthened with a hedge to prevent them from falling in. When these drains are made on a declivity, they should have a layer of gutter tiles at the bottom, or else house tiles with the face upwards: in some cases, too, they should be covered[83]

[79] "Ne familiæ male sit."

[80] In B. xvii. c. 3.

[81] The Pteris aquilina, or female fern. No such juices drop from it as here mentioned by Pliny, Fée says.

[82] A superstition quite unworthy of our author; and the same with respect to that mentioned in the next line.

[83] Sub-soil drainage is now universally employed, with the agency of draining-tiles, made for the purpose.

with earth, and made to run into others of a larger size and wider; the bottom, also, should, if possible, have a coating of stones or of gravel. The openings, too, should be strengthened with two stones placed on either side, and another laid upon the top. Democritus has described a method of rooting up a forest, by first macerating the flower of the lupine[84] for one day in the juice of hemlock, and then watering the roots of the trees with it.

CHAP. 9. (7.)—THE DIFFERENT KINDS OF GRAIN.

As the field is now prepared, we shall proceed to speak of the nature of the various kinds of grain; we must premise, however, that there are two principal classes of grain, the cereals,[85] comprising wheat and barley, and the legumina, such as the bean and the chick-pea, for instance. The difference between these two classes is too well known to require any further description.

CHAP. 10.—THE HISTORY OF THE VARIOUS KINDS OF GRAIN.

The cereals are divided again into the same number of varieties, according to the time of the year at which they are sown. The winter grains are those which are put in the ground about the setting of the Vergiliæ,[86] and there receive their nutriment throughout the winter, for instance, wheat,[87] spelt,[88] and barley.[89] The summer grains are those which are sown in summer, before the rising of the Vergiliæ,[90]

[84] The flower of the lupine could not possibly produce any such effect; and the juice of cicuta, or hemlock, in only a very trifling degree.

[85] This word answers to the Latin "frumenta," which indicates all those kinds of corn from which bread was prepared by the ancients.

[86] See c. 59 of this Book.

[87] Triticum hibernum of Linnæus, similar to the "siligo" mentioned in the sequel. Winter wheat was greatly cultivated in Apulia.

[88] "Far." This name is often used in the classics, to signify corn in general; but in the more restricted sense in which it is here employed, it is "Triticum dicoccum," the "Zea" of the Greeks. It consists of two varieties, the single grained, the Triticum monococcum of Linnæus, and the double-grained, the Triticum spelta of Linnæus, which is still called "farra" in Friuli.

[89] Hordeum sativum of Linnæus.

[90] See c. 66 of this Book.

such as millet,[91] panic,[92] sesame,[93] horminum,[94] and irio,[95] in accordance, however, with the usage of Italy only; for in Greece and Asia all the grains are sown just after the setting of the Vergiliæ. There are some, again, that are sown at either season in Italy, and others at a third period, or, in other words, in the spring. Some authors give the name of spring-grain to millet, panic, lentils,[96] chick-peas,[97] and alica,[98] while they call wheat, barley, beans, turnips, and rape, sementive or early sowing seeds. Certain species of wheat are only sown to make fodder for cattle, and are known by the name of "farrago,"[99] or mixed grain; the same, too, with the leguminous plants, the vetch, for instance. The lupine,[1] however, is grown in common as food for both cattle and men.

All the leguminous[2] plants, with the exception of the bean, have a single root, hard and tough, like wood, and destitute of numerous ramifications; the chick-pea has the deepest root of all. Corn has numerous fibrous roots, but no ramifications. Barley makes its appearance[3] above ground the seventh day after sowing; the leguminous plants on the fourth, or at the very latest, the seventh; the bean from the fifteenth day to the twentieth: though in Egypt the leguminous plants appear as early as the third day after they are sown. In barley, one extremity of the grain throws out the root, and the other the

[91] Panicum Italicum of Linnæus.

[92] Panicum miliaceum of Linnæus. This was probably one of the first grains from which bread was made.

[93] The Sesamum orientale of Linnæus. It is no longer cultivated in Europe, though formerly it was much used in Greece.

[94] It is very doubtful if this is the same as clary, the Salvia horminum of Linnæus, as that is one of the Labiatæ, whereas here, most probably, a leguminous plant is spoken of.

[95] It has been asserted that this is identical with the Sisymbrium polyceratium of Linnæus, rock-gentle, rock-gallant, or winter-cress. Fée, however, is strongly of opinion that it can only be looked for in the Sisymbrium irio of Linnæus.

[96] Ervum lens of Linnæus.

[97] The Cicer arietinum of naturalists, the Garbanzo of the Spaniards. It abounds in the south of Europe and in India.

[98] A variety of spelt was called by this name; but it was more generally applied to a kind of flummery, pottage or gruel.

[99] Hence our word "forage."

[1] Lupinus hirsutus and pilosus of Linnæus.

[2] From Theophrastus, Hist. Plant. B. viii. c. 2.

[3] All this, of course, depends upon numerous circumstances.

blade; this last flowers, too, before the other grain. In the cereals in general it is the thicker end of the seed that throws out the root, the thinner end the blossom; while in the other seeds both root and blossom issue from the same part.

During the winter, corn is in the blade; but in the spring winter corn throws out a tall stem. As for millet and panic, they grow with a jointed and grooved[4] stalk, while sesame has a stem resembling that of fennel-giant. The fruit of all these seeds is either contained in an ear, as in wheat and barley, for instance, and protected from the attacks of birds and small animals by a prickly beard bristling like so many palisades; or else it is enclosed in pods, as in the leguminous plants, or in capsules, as in sesame and the poppy. Millet and panic can only be said to belong to the grower and the small birds in common, as they have nothing but a thin membrane to cover them, without the slightest protection. Panic receives that name from the panicule[5] or down that is to be seen upon it; the head of it droops languidly, and the stalk tapers gradually in thickness, being of almost the toughness and consistency of wood: the head is loaded with grain closely packed, there being a tuft upon the top, nearly a foot in length. In millet the husks which embrace the grain bend downward with a wavy tuft upon the edge. There are several varieties of panic, the mammose, for instance, the ears of which are in clusters with small edgings of down, the head of the plant being double; it is distinguished also according to the colour, the white, for instance, the black, the red, and the purple even. Several kinds of bread are made from millet, but very little from panic: there is no grain known that weighs heavier than millet, and which swells more in baking. A modius of millet will yield sixty pounds' weight of bread; and three sextarii steeped in water will make one modius of fermenty.[6] A kind of millet[7] has been introduced from India into Italy within the last ten years, of a swarthy colour, large grain, and a

[4] This is certainly the fact, as Fee says, but it is the same with all the graminea.

[5] A characteristic of the Panicum miliaceum in particular.

[6] Or porridge; "puls."

[7] It has been suggested that this was maize, but that is indigenous to South America. Fée has little doubt that it is the Holcus sorgho of Linnæus, the "Indian millet," that is meant.

stalk like that of the reed. This stalk springs up to the height of seven feet, and has tufts of a remarkable size, known by the name of "phobæ."[8] This is the most prolific of all the cereals, for from a single grain no less than three sextarii[9] are produced: it requires, however, to be sown in a humid soil.

Some kinds of corn begin to form the ear at the third joint, and others at the fourth, though at its first formation the ear remains still concealed. Wheat, however, has four[10] articulations, spelt[11] six, and barley eight. In the case of these last, the ear does not begin to form before the number of joints, as above mentioned, is complete. Within four or five days, at the very latest, after the ear has given signs of forming, the plant begins to flower, and in the course of as many days or a little more, sheds its blossom: barley blossoms at the end of seven days at the very latest. Varro says that the grains are perfectly formed at the end of four times[12] nine days from their flowering, and are ready for cutting at the ninth month.

The bean, again, first appears in leaf, and then throws out a stalk, which has no articulations[13] upon it. The other leguminous plants have a tough, ligneous stalk, and some of them throw out branches, the chick-pea, the fitch, and the lentil, for instance. In some of the leguminous plants, the pea, for example, the stem creeps along the ground, if care is not taken to support it by sticks: if this precaution is omitted, the quality is deteriorated. The bean and the lupine are the only ones among the leguminous plants that have a single stem: in all the others the stem throws out branches, being of a ligneous nature, very thin, and in all cases hollow. Some of these plants throw out the leaves from the root, others at the top.[14] Wheat, barley, and the vetch, all the plants, in fact, which produce straw, have a single leaf only at the summit: in barley, however, this leaf is rough, while in the others it

[8] From the Greek φόβη. The stalk and husk of the sorgho is covered with a fine down. The reading "cornis" has been adopted.

[9] This is considered by Fée to be very improbable.

[10] In reality these vary, according to the rapidity of the growth.

[11] Strictly speaking, spelt has seven.

[12] This depends upon the time when it is sown, and numerous other circumstances.

[13] Strictly speaking, he is right; but still there is a swelling in the stalk, to be perceived at the points where the leaves take their rise.

[14] This is incorrect; they all of them throw out leaves from the root.

is smooth. * * * In the bean, again, the chick-pea, and the pea, the leaves are numerous and divided. In corn the leaf is similar to that of the reed, while in the bean it is round, as also in a great proportion of the leguminous plants. In the ervilia[15] and the pea the leaf is long,[16] in the kidney-bean veined, and in sesame[17] and irio the colour of blood. The lupine and the poppy are the only ones among these plants that lose[18] their leaves.

The leguminous plants remain a longer time in flower, the fitch and the chick-pea more particularly; but the bean is in blossom the longest of them all, for the flower remains on it forty days; not, indeed, that each stalk retains its blossom for all that length of time, but, as the flower goes off in one, it comes on in another. In the bean, too, the crop is not ripe all at once, as is the case with corn; for the pods make their appearance at different times, at the lowest parts first, the blossom mounting upwards by degrees.

When the blossom is off in corn, the stalk gradually thickens, and it ripens within forty days at the most. The same is the case, too, with the bean, but the chick-pea takes a much shorter time to ripen; indeed, it is fit for gathering within forty days from the time that it is sown. Millet, panic, sesame, and all the summer grains are ripe within forty days after blossoming, with considerable variations, of course, in reference to soil and weather. Thus, in Egypt, we find barley cut at the end of six months, and wheat at the end of seven, from the time of sowing. In Hellas, again, barley is cut in the seventh month, and in Peloponnesus in the eighth; the wheat being got in at a still later period.

Those grains which grow on a stalk of straw are enclosed in an envelope protected by a prickly beard; while in the bean and the leguminous plants in general they are enclosed in pods upon branches which shoot alternately from either side. The cereals are the best able to withstand the winter, but the leguminous plants afford the most substantial food. In wheat, the

[15] The same as the "Ervum" probably, the fitch, orobus, or bitter vetch.

[16] Not so with the pea, as known to us.

[17] This is only true at the end of the season, and when the plant is dying.

[18] These annuals lose their leaves only that have articulations on the stem; otherwise they die outright at the fall of the leaf.

grain has several coats, but in barley,[19] more particularly, it is naked and exposed; the same, too, with arinca,[20] but most of all, the oat. The stem is taller in wheat than it is in barley, but the ear is more bearded[21] in the last. Wheat, barley, and winter-wheat[22] are threshed out; they are cleaned, too, for sowing just as they are prepared for the mill, there being no necessity for parching[23] them. Spelt, on the other hand, millet, and panic, cannot be cleaned without parching them; hence it is that they are always sown raw and with the chaff on. Spelt is preserved in the husk, too, for sowing, and, of course, is not in such case parched by the action of fire.

CHAP. 11.—SPELT.

Of all these grains barley is the lightest,[24] its weight rarely exceeding fifteen pounds to the modius, while that of the bean is twenty-two. Spelt is much heavier than barley, and wheat heavier than spelt. In Egypt they make a meal[25] of olyra,[26] a third variety of corn that grows there. The Gauls have also a kind of spelt peculiar to that country: they give it the name of "brace,"[27] while to us it is known as "sandala:" it has a grain of remarkable whiteness. Another difference, again, is the fact that it yields nearly four pounds more of bread to the modius than any other kind of spelt. Verrius states that for three hundred years the Romans made use of no other meal than that of corn.

[19] If by "tunica" he means the husk of chaff, which surrounds the grain, the assertion is contrary to the fact, in relation to barley and the oat.

[20] Only another name, Fée thinks, for the Triticum hibernum, or winter-wheat. Spelt or zea has been suggested, as also the white barley of the south of Europe; see c. 20.

[21] Egyptian wheat, or rather what is called mummy-wheat, is bearded equally to barley.

[22] Siligo.

[23] Before grinding.

[24] Oats and rye excepted.

[25] Here the word "far" means "a meal," or "flour," a substitute for that of "far," or "spelt."

[26] Triticum monococcum, according to some. Fée identifies it with the Triticum spelta of Linnæus.

[27] A variety, probably, of the Triticum hibernum of Linnæus, with white grains; the white-wheat of the French, from which the ancient Gauls made their malt; hence the French word "brasser," to "brew."

CHAP. 12.—WHEAT.

There are numerous kinds of wheat which have received their names from the countries where they were first produced. For my part, however, I can compare no kind of wheat to that of Italy either for whiteness or weight, qualities for which it is more particularly distinguished: indeed it is only with the produce of the more mountainous parts of Italy that the foreign wheats can be put in comparison. Among these the wheat of Bœotia[28] occupies the first rank, that of Sicily the second, and that of Africa the third. The wheats of Thrace, Syria, and, more recently, of Egypt, used to hold the third rank for weight, these facts having been ascertained through the medium of the athletes; whose powers of consumption, equal to those of beasts of burden, have established the gradations in weight, as already stated. Greece, too, held the Pontic[29] wheat in high esteem; but this has not reached Italy as yet. Of all the varieties of grain, however, the Greeks gave the preference to the kinds called dracontion, strangia, and Selinusium, the chief characteristic of which is a stem of remarkable thickness: it was this, in the opinion of the Greeks, that marked them as the peculiar growth of a rich soil. On the other hand, they recommended for sowing in humid soils an extremely light and diminutive species of grain, with a remarkably thin stalk, known to them as speudias, and standing in need of an abundance of nutriment. Such, at all events, were the opinions generally entertained in the reign of Alexander the Great, at a time when Greece was at the height of her glory, and the most powerful country in the world. Still, however, nearly one hundred and forty-four years before the death of that prince we find the poet Sophocles, in his Tragedy of "Triptolemus," praising the corn of Italy before all others. The passage, translated word for word, is to the following effect:—

"And favour'd Italy grows white with hoary wheat."

And it is this whiteness that is still one of the peculiar merits of the Italian wheat; a circumstance which makes me the more surprised to find that none of the Greek writers of a later period have made any reference to it.

[28] From Theophrastus, De Causis, B. iv.

[29] That of the Ukraine and its vicinity, which is still held in high esteem.

Of the various kinds of wheat which are imported at the present day into Rome, the lightest in weight are those which come from Gaul and Chersonnesus; for, upon weighing them, it will be found that they do not yield more than twenty pounds to the modius. The grain of Sardinia weighs half a pound more, and that of Alexandria one-third of a pound more than that of Sardinia; the Sicilian wheat is the same in weight as the Alexandrian. The Bœotian wheat, again, weighs a whole pound more than these last, and that of Africa a pound and three quarters. In Italy beyond the Padus, the spelt, to my knowledge, weighs twenty-five pounds to the modius, and, in the vicinity of Clusium, six-and-twenty. We find it a rule, universally established by Nature, that in every kind of commissariat bread[30] that is made, the bread exceeds the weight of the grain by one-third; and in the same way it is generally considered that that is the best kind of wheat, which, in kneading, will absorb one congius of water.[31] There are some kinds of wheat which give, when used by themselves, an additional weight equal to this; the Balearic wheat, for instance, which to a modius of grain yields thirty-five pounds weight of bread. Others, again, will only give this additional weight by being mixed with other kinds, the Cyprian wheat and the Alexandrian, for example; which, if used by themselves, will yield no more than twenty pounds to the modius. The wheat of Cyprus is swarthy, and produces a dark bread; for which reason it is generally mixed with the white wheat of Alexandria; the mixture yielding twenty-five pounds of bread to the modius of grain. The wheat of Thebais, in Egypt, when made into bread, yields twenty-six pounds to the modius. To knead the meal with sea-water, as is mostly done in the maritime districts, for the purpose of saving the salt, is extremely pernicious; there is nothing, in fact, that will more readily predispose the human body to disease. In Gaul and Spain, where they make a drink[32] by steeping corn in the way that has been already described—they employ the foam[33] which thickens upon the surface as a leaven: hence it is that the bread in those countries is lighter than that made elsewhere.

30 Panis militaris.
31 To the modius of wheat.
32 He alludes to beer, or sweet-wort. See B. xiv. c. 29.
33 He alludes to yeast. See B. xxii. c. 82.

There are some differences, also, in the stem of wheat; for the better the kind the thicker it is. In Thrace, the stem of the wheat is covered with several coats,[34] which are rendered absolutely necessary by the excessive cold of those regions. It is the cold, also, that led to the discovery there of the three-month[35] wheat, the ground being covered with snow most of the year. At the end mostly of three months after it has been sown, this wheat is ready for cutting, both in Thrace and in other parts of the world as well. This variety is well known, too, throughout all the Alpine range, and in the northern provinces there is no kind of wheat that is more prolific; it has a single stem only, is by no means of large size in any part of it, and is never sown but in a thin, light soil. There is a two-month[36] wheat also found in the vicinity of Ænos, in Thrace, which ripens the fortieth day after sowing; and yet it is a surprising fact, that there is no kind of wheat that weighs heavier than this, while at the same time it produces no bran. Both Sicily and Achaia grow it, in the mountainous districts of those countries; as also Eubœa, in the vicinity of Carystus. So greatly, then, is Columella in error,[37] in supposing that there is no distinct variety of three-month wheat even; the fact being that these varieties have been known from the very earliest times. The Greeks give to these wheats the name of "setanion." It is said that in Bactria the grains of wheat are of such an enormous size, that a single one is as large as our ears of corn.[38]

CHAP. 13.—BARLEY: RICE.

Of all the cereals the first that is sown is barley. We shall state the appropriate time for sowing each kind when we come to treat of the nature of each individually. In India, there is

[34] This assertion, from Theophrastus, Hist. Plant. B. viii. c. 4, is not based on truth. It is possible that he may allude in reality to some other gramineous plant.

[35] Trimestre.

[36] Bimestre.

[37] Columella (B. ii. c. 6) does *not* state to this effect; on the contrary, he speaks of the existence of a three months' wheat; but he asserts, and with justice, that wheat sown in the autumn is better than that sown in March.

[38] If he alludes here to what Theophrastus says, his assertion is simply that, in Bactria, the grains are as large as an olive-stone.

both a cultivated and a wild[39] barley, from which they make excellent bread, as well as alica.[40] But the most favourite food of all there is rice,[41] from which they prepare a ptisan[42] similar to that made from barley in other parts of the world. The leaves of rice are fleshy,[43] very like those of the leek, but broader; the stem is a cubit in height, the blossom purple, and the root globular, like a pearl in shape.[44]

CHAP. 14.—POLENTA.

Barley is one of the most ancient aliments of man, a fact that is proved by a custom of the Athenians, mentioned by Menander,[45] as also by the name of "hordearii,"[46] that used to be given to gladiators. The Greeks, too, prefer barley to anything else for making polenta.[47] This food is made in various ways: in Greece, the barley is first steeped in water, and then left a night to dry. The next day they parch it, and then grind it in the mill. Some persons parch it more highly, and then sprinkle it again with a little water; after which they dry it for grinding. Others shake the grain from out of the ear while green, and, after cleaning and soaking it in water, pound it in a mortar. They then wash the paste in baskets, and leave it to dry in the sun; after which they pound it again, clean it, and grind it in the mill. But whatever the mode of preparation adopted, the proportions are always twenty pounds of barley to three pounds of linseed,[48] half a pound of coriander, and fifteen drachmæ[49] of salt: the ingredients are first parched, and then ground in the mill.

Those who want it for keeping, store it in new earthen vessels, with fine flour and bran. In Italy, the barley is parched without being steeped in water, and then ground to a

[39] There is no wild barley in India at the present day.
[40] Porridge, or fermenty.
[41] Oryza sativa of Linnæus.
[42] Like our rice-milk, probably. See B. xxii. c. 26.
[43] They are not carnose or fleshy, but thin, and similar to those of the reed.
[44] On the contrary, it is tough and fibrous.
[45] The barley was, originally, the prize given to the victor in the Eleusinian games.
[46] Or "barley-fed."
[47] The ἀλφίτον of the Greeks.
[48] This, as Fée observes, would tend to give it a very disagreeable flavour.
[49] "Acetabulum."

fine meal, with the addition of the ingredients already mentioned, and some millet as well. Barley bread, which was extensively used by the ancients, has now fallen into universal disrepute, and is mostly used as a food for cattle only.

CHAP. 15.—PTISAN.

With barley, too, the food called ptisan[50] is made, a most substantial and salutary aliment, and one that is held in very high esteem. Hippocrates, one of the most famous writers on medical science, has devoted a whole volume to the praises of this aliment. The ptisan of the highest quality is that which is made at Utica; that of Egypt is prepared from a kind of barley, the grain of which grows with two points.[51] In Bætica and Africa, the kind of barley from which this food is made is that which Turranius calls the "smooth"[52] barley: the same author expresses an opinion, too, that olyra[53] and rice are the same. The method of preparing ptisan is universally known.

CHAP. 16.—TRAGUM.

In a similar manner, too, tragum is prepared from seed[54] wheat, but only in Campania and Egypt.

CHAP. 17.—AMYLUM.

Amylum is prepared from every kind of wheat, and from winter-wheat[55] as well; but the best of all is that made from three-month wheat. The invention of it we owe to the island of Chios, and still, at the present day, the most esteemed kind comes from there; it derives its name from its being made without the help of the mill.[56] Next to the amylum made with three-month wheat, is that which is prepared from the lighter kinds of wheat. In making it, the grain is soaked in

[50] Similar to our pearl barley, probably.

[51] "Anguli." Dalechamps interprets this as two rows of grain; but Fée thinks that it signifies angles, and points. The Polygonum fagopyrum of Linnæus, he says, buck-wheat, or black-wheat, has an angular grain, but he doubts whether that can possibly be the grain here alluded to.

[52] There is no barley without a beard; it is clearly a variety of wheat that is alluded to.

[53] Triticum spelta of Linnæus.

[54] "Semen," the same as zea, or spelt.

[55] Siligo.

[56] Ἄμυλον.

fresh water, placed in wooden vessels; care being taken to keep it covered with the liquid, which is changed no less than five times in the course of the day. If it can be changed at night as well, it is all the better for it, the object being to let it imbibe the water gradually and equally. When it is quite soft, but before it turns sour, it is passed through linen cloth, or else wicker-work, after which it is poured out upon a tile covered with leaven, and left to harden in the sun. Next to the amylum of Chios, that of Crete is the most esteemed, and next to that the Ægyptian. The tests of its goodness are its being light and smooth: it should be used, too, while it is fresh. Cato,[57] among our writers, has made mention of it.

CHAP. 18.—THE NATURE OF BARLEY.

Barley-meal, too, is employed for medicinal purposes; and it is a curious fact, that for beasts of burden they make a paste of it, which is first hardened by the action of fire, and then ground. It is then made up into balls, which are introduced with the hand into the paunch, the result of which is, that the vigour and muscular strength of the animal is considerably increased. In some kinds of barley, the ears have two rows of grains,[58] and in others more; in some cases, as many as six.[59] The grain itself, too, presents certain differences, being long and thin, or else short or round, white, black,[60] or, in some instances, of a purple colour. This last kind is employed for making polenta: the white is ill adapted for standing the severity of the weather. Barley is the softest of all the grains: it can only be sown in a dry, loose soil,[61] but fertile withal. The chaff of barley ranks among the very best; indeed, for litter there is none that can be compared with it. Of all grain, barley is the least exposed to accidents, as it is gathered before the time that mildew begins to attack wheat; for which reason it is that the provident agriculturist sows only as much wheat

[57] De Re Rust. c. 87. This "amylum" seems somewhat to resemble our starch.

[58] The Hordeum distichum of Linnæus.

[59] Hordeum hexastichum of Linnæus. The Hordeum vulgare, or common barley, has but four rows.

[60] These varieties are not known at the present day, and Fée questions if they ever existed. There is a black barley found in Germany, the Hordeum nigrum of Willdenow.

[61] A calcareous soil is the best adapted for barley.

as may be required for food. The saying is, that "barley is sown in a money-bag," because it so soon returns a profit. The most prolific kind of all is that which is got in at Carthage,[62] in Spain, in the month of April. It is in the same month that it is sown in Celtiberia, and yet it yields two harvests in the same year. All kinds of barley are cut sooner than other grain, and immediately after they are ripe; for the straw is extremely brittle, and the grain is enclosed in a husk of remarkable thinness. It is said, too, that a better polenta[63] is made from it, if it is gathered before it is perfectly ripe.

CHAP. 19. (8.)—ARINCA, AND OTHER KINDS OF GRAIN THAT ARE GROWN IN THE EAST.

The several kinds of corn are not everywhere the same; and even where they are the same, they do not always bear a similar name. The kinds most universally grown are spelt, by the ancients known as "adorea," winter wheat,[64] and wheat;[65] all these being common to many countries. Arinca was originally peculiar to Gaul, though now it is widely diffused over Italy as well. Egypt, too, Syria, Cilicia, Asia, and Greece, have their own peculiar kinds, known by the names of zea,[66] olyra, and tiphe.[67] In Egypt, they make a fine flour from wheat of their own growth, but it is by no means equal to that of Italy. Those countries which employ zea, have no spelt. Zea, however, is to be found in Italy, and in Campania more particularly, where it is known by the name of "seed."[68] The grain that bears this name enjoys a very considerable celebrity, as we shall have occasion to state[69] on another occasion; and it is in honour of this that Homer[70] uses the expression, *ζείδωρος ἄρουρα*, and not, as some suppose, from the fact of the earth giving life.[71] Amylum is made, too, from this grain, but of a

[62] Nova Carthago, or New Carthage.

[63] This fallacious opinion is shared with Galen, De Facult. Anim. B. vi. c. 11.

[64] Siligo.

[65] Triticum.

[66] The Triticum dicoccum, or spelt.

[67] Probably rye. See the next Chapter.

[68] Semen.

[69] In c. 20, also in c. 29. This grain, which was in reality a kind of spelt, received its name probably from having been the first cultivated.

[70] Il. ii. c. 548: "the land that produces zea."

[71] Not *ἀπὸ τοῦ ζῆν*, from "living."

coarser[72] quality than the kind already mentioned;[73] this, however, is the only difference that is perceptible.

The most hardy kind, however, of all the grains is spelt, and the best to stand the severity of the weather; it will grow in the very coldest places, as also in localities that are but half tilled, or soils that are extremely hot, and destitute of water. This was the earliest food of the ancient inhabitants of Latium; a strong proof of which is the distributions of adorea that were made in those times, as already stated.[74] It is evident, too, that the Romans subsisted for a long time upon pottage,[75] and not bread; for we find that from its name of "puls," certain kinds of food are known, even at the present day, as "pulmentaria."[76] Ennius, too, the most ancient of our poets, in describing the famine in a siege, relates how that the parents snatched away the messes of pottage[77] from their weeping children. At the present day, even, the sacrifices in conformity with the ancient rites, as well as those offered upon birthdays, are made with parched pottage.[78] This food appears to have been as much unknown in those days in Greece as polenta was in Italy.

CHAP. 20.—WINTER WHEAT. SIMILAGO, OR FINE FLOUR.

There is no grain that displays a greater avidity than wheat, and none that absorbs a greater quantity of nutriment. With all propriety I may justly call winter wheat[79] the very choicest of all the varieties of wheat. It is white, destitute of all flavour,[80] and not oppressive[81] to the stomach. It suits moist

[72] Merely, as Fée says, from the faulty method employed in its preparation, as starch has, in all cases, the same physical appearance.

[73] In c. 17 of this Book.

[74] In c. 3 of this Book.

[75] "Puls," like our porridge.

[76] Any food that was originally eaten with "puls," and afterwards with bread, was so called, such as meat, vegetables, &c.

[77] "Offam." This word, which in the later writers signifies a "cake," originally meant a hardened lump of porridge.

[78] Pulte fritillâ.

[79] "Siligo." There are numerous contradictions in Pliny with reference to this plant, but it is now pretty generally agreed that it is the Triticum hibernum of Linnæus: the "froment tousselle" of the French. It was formerly the more general opinion that it was identical with spelt; but that cannot be the case, as spelt is red, and siligo is described as white.

[80] "Sine virtute." It is doubtful what is the meaning of this.

[81] Sine pondere.

localities particularly well, such as we find in Italy and Gallia Comata; but beyond the Alps it is found to maintain its character only in the territory of the Allobroges and that of the Memini; for in the other parts of those countries it degenerates at the end of two years into common wheat.[82] The only method of preventing this is to take care and sow the heaviest grains only.

(9.) Winter wheat furnishes bread of the very finest quality and the most esteemed delicacies of the bakers. The best bread that is known in Italy is made from a mixture of Campanian winter wheat with that of Pisæ. The Campanian kind is of a redder colour, while the latter is white; when mixed with chalk,[83] it is increased in weight. The proper proportion for the yield of Campanian wheat to the modius of grain is four sextarii of what is known as bolted flour;[84] but when it is used in the rough and has not been bolted, then the yield should be five sextarii of flour. In addition to this, in either case there should be half a modius of white meal, with four sextarii of coarse meal, known as "seconds," and the same quantity of bran.[85] The Pisan wheat produces five sextarii of fine flour to the modius; in other respects it yields the same as that of Campania. The wheat of Clusium and Arretium gives another sextarius of fine flour, but the yield is similar to that of the kinds already mentioned in all other respects. If, however, as much of it as possible is converted into fine wheat meal, the modius will yield sixteen pounds weight of white bread, and three of seconds, with half a modius of bran. These differences, however, depend very materially upon the grinding; for when the grain is ground quite dry it produces more meal, but when sprinkled with salt water[86] a whiter flour, though at the same time a greater quantity of bran. It is very evident that "farina," the name we give to meal, is derived from "far." A modius of meal made from Gallic winter

[82] In other places he says, most unaccountably, that wheat "degenerates into siligo."

[83] As to this practice, see c. 29.

[84] "Quam vocant castratam."

[85] From this account, it would appear that there were twenty-four sextarii to the modius; but the account in general is very contradictory.

[86] Salt water is rarely used for this purpose in modern times. See this passage discussed in Beckmann on Inventions, *Bohn's Ed.* vol. i. p. 164.

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wheat, yields twenty-two pounds of bread; while that of Italy, if made into bread baked in tins,[87] will yield two or three pounds more. When the bread is baked in the oven,[88] two pounds must be added in weight in either case.

(10.) Wheat yields a fine flour[89] of the very highest quality. In African wheat the modius ought to yield half a modius of fine flour and five sextarii of pollen, that being the name given to fine wheat meal, in the same way that that of winter wheat is generally known as "flos," or the "flower." This fine meal is extensively used in copper works and paper manufactories. In addition to the above, the modius should yield four sextarii of coarse meal, and the same quantity of bran. The finest wheaten flour will yield one hundred[90] and twenty-two pounds of bread, and the fine meal of winter wheat one hundred[90] and seventeen, to the modius of grain. When the prices of grain are moderate, meal sells at forty asses the modius, bolted wheaten flour at eight asses more, and bolted flour of winter wheat, at sixteen asses more. There is another distinction again in fine wheaten flour, which originated formerly in the days of L. Paulus. There were three classes of wheat; the first of which would appear to have yielded seventeen pounds of bread, the second eighteen, and the third nineteen pounds and a third: to these were added two pounds and a half of seconds,[91] and the same quantity of brown[91] bread, with six sextarii of bran.[92]

Winter wheat never ripens all at once, and yet there is none of the cereals that can so ill brook any delay; it being of so delicate a nature, that the ears directly they are ripe will begin to shed their grain. So long, however, as it is in stalk, it is exposed to fewer risks than other kinds of wheat, from the fact

[87] "Artopticio." See c. 27 of this Book.

[88] Without tin, probably; or the tin bread may have been baked before the fire, similar to the method adopted at the present day with the American ovens.

[89] "Similago." Founders still use meal occasionally for making moulds; it is also employed in making paper.

[90] The mention of "hundreds" here is evidently faulty, unless the other part of the passage is corrupt. Fée suggests twenty-two and twenty seven.

[91] But above we find him stating that "secundarius," "seconds" flour, and "cibarius," or "coarse," meal, are the same thing. His contradictions cannot apparently be reconciled.

[92] The whole of this passage, as Brotier remarks, is evidently corrupt.

of its always having the ear upright, and not retaining the dew, which is a prolific cause of mildew.

From arinca[93] a bread of remarkable sweetness is made. The grains in this variety lie closer than they do in spelt; the ear, too, is larger and more weighty. It is rarely the case that a modius of this grain does not weigh full sixteen pounds. In Greece they find great difficulty in threshing it; and hence it is that we find Homer[94] saying that it is given to beasts of burden, this being the same as the grain that he calls "olyra." In Egypt it is threshed without any difficulty, and is remarkably prolific. Spelt has no beard, and the same is the case with winter wheat, except[95] that known as the Laconian variety. To the kinds already mentioned we have to add bromos,[96] the winter wheat just excepted, and tragos,[97] all of them exotics introduced from the East, and very similar to rice. Tiphe[98] also belongs to the same class, from which in our part of the world a cleaned grain resembling rice is prepared. Among the Greeks, too, there is the grain known as zea; and it is said that this, as well as tiphe, when cleaned from the husk and sown, will degenerate[99] and assume the form of wheat; not immediately, but in the course of three years.

CHAP. 21.—THE FRUITFULNESS OF AFRICA IN WHEAT.

There is no grain more prolific than wheat, Nature having bestowed upon it this quality, as being the substance which she destined for the principal nutriment of man. A modius of

[93] Fée has no doubt that this was siligo, or winter-wheat, in a very high state of cultivation.

[94] Il. v. l. 195.

[95] There are still some varieties both of winter-wheat and spelt that have the beard.

[96] It is generally thought that this is the oat, the Avena sativa of Linnæus, while some have suggested rice. Fée thinks that by the name, some exotic gramineous plant is meant.

[97] Probably a variety of spelt, as Sprengel conjectures, from Galen and other writers. See c. 16 of this Book.

[98] Fée thinks that it is the grain of the Festuca fluitans of Linnæus that is here alluded to, and identifies it with the "ulva palustris" of Virgil, Geor. iii. 174.

[99] The Latin word "degener" cannot here mean "degenerate," in our sense of the word, but must merely imply a change of nature in the plant.

wheat, if the soil is favourable, as at Byzacium,[1] a champaign district of Africa, will yield as much as one hundred and fifty[2] modii of grain. The procurator of the late Emperor Augustus sent him from that place—a fact almost beyond belief—little short of four hundred shoots all springing from a single grain; and we have still in existence his letters on the subject. In a similar manner, too, the procurator of Nero sent him three hundred and sixty stalks all issuing from a single grain.[3] The plains of Leontium in Sicily, and other places in that island, as well as the whole of Bætica, and Egypt more particularly, yield produce a hundred-fold. The most prolific kinds of wheat are the ramose wheat,[4] and that known as the "hundred-grain"[5] wheat. Before now, as many as one hundred beans, too, have been found on a single stalk.

CHAP. 22.—SESAME. ERYSIMUM, OR IRIO. HORMINUM.

We have spoken[6] of sesame, millet, and panic as belonging to the summer grains. Sesame[7] comes from India, where they extract an oil from it; the colour of its grain is white. Similar in appearance to this is the erysimum of Asia and Greece, and indeed it would be identical with it were it not that the grain is better filled.[8] It is the same grain that is known among us as "irio;" and strictly speaking, ought rather to be classed among the medicaments than the cereals. Of the same nature, too, is the plant called "horminum"[9] by the Greeks, though resembling cummin[10] in appearance; it is sown at the same time as sesame: no animal will eat either this or irio while green.

CHAP. 23.—THE MODE OF GRINDING CORN.

All the grains are not easily broken. In Etruria they first

[1] See B. xvii. c. 3.

[2] We know of no such fruitfulness as this in the wheat of Europe. Fifteen-fold, as Fée remarks, is the utmost amount of produce that can be anticipated.

[3] Fée mentions instances of 150, 92, and 63 stalks arising from a single grain; but all these fall far short of the marvels here mentioned by Pliny.

[4] The Triticum compositum of Linnæus; supposed to have originally come from Egypt or Barbary.

[5] "Centigranium." Probably the same as the last.

[6] In c. 10 of this Book.

[7] See c. 10.

[8] Pinguius.

[9] Already mentioned in c. 10.

[10] See B. xix. c. 47; and B. xx. c. 57.

parch the spelt in the ear, and then pound it with a pestle shod with iron at the end. In this instrument the iron is notched[11] at the bottom, sharp ridges running out like the edge of a knife, and concentrating in the form of a star; so that if care is not taken to hold the pestle perpendicularly while pounding, the grains will only be splintered and the iron teeth broken. Throughout the greater part of Italy, however, they employ a pestle that is only rough[12] at the end, and wheels turned by water, by means of which the corn is gradually ground. I shall here set forth the opinions given by Mago as to the best method of pounding corn. He says that the wheat should be steeped first of all in water, and then cleaned from the husk; after which it should be dried in the sun, and then pounded with the pestle; the same plan, he says, should be adopted in the preparation of barley. In the latter case, however, twenty sextarii of grain require only two sextarii of water. When lentils are used, they should be first parched, and then lightly pounded with the bran; or else, adopting another method, a piece of unbaked brick and half a modius of sand[13] should be added to every twenty sextarii of lentils.

Ervilia should be treated in the same way as lentils. Sesame should be first steeped in warm water, and then laid out to dry, after which it should be rubbed out briskly, and then thrown into cold water, so that the chaff may be disengaged by floating to the surface. After this is done, the grain should again be spread out in the sun, upon linen cloths, to dry. Care, however, should be taken to lose no time in doing this, as it is apt to turn musty, and assume a dull, livid colour. The grains, too, which are just cleaned from the husk, require various methods of pounding. When the beard is ground by itself, without the grain, the result is known as "acus,"[14] but it is only used by goldsmiths.[15] If, on the other hand, it is beaten

[11] This would rather *grate* the grain than *pound* it, as Beckmann observes. See his Hist. Inv., vol. i. pp. 147 and 164, *Bohn's Ed.*, where the meaning of this passage has been commented upon. Gesner, also, in his Lexicon Rusticum, has endeavoured to explain it.

[12] Ruido.

[13] It is surprising to find the Romans, not only kneading their bread with sea-water, but putting in it pounded bricks, chalk, and sand!

[14] Beard chaff; so called, probably, from the sharpness of the points, like needles (acus).

[15] See B. xxxiii. c. 3; where he says, that a fire lighted with this chaff, fuses gold more speedily than one made with maple wood.

out on the threshing-floor, together with the straw, the chaff has the name of "palea," * * * * and in most parts of the world is employed as fodder for beasts of burden. The residue of millet, panic, and sesame, is known to us as "apluda;" but in other countries it is called by various other names.

CHAP. 24.—MILLET.

Campania is particularly prolific in millet, and a fine white porridge is made from it: it makes a bread, too, of remarkable sweetness. The nations of Sarmatia[16] live principally on this porridge, and even the raw meal, with the sole addition of mares' milk, or else blood[17] extracted from the thigh of the horse. The Æthiopians know of no other grain but millet and barley.

CHAP. 25.—PANIC.

The people of Gaul, and of Aquitania[18] more particularly, make use of panic; the same is the case, too, in Italy beyond the Padus, with the addition, however, of the bean, without which they prepare none of their food. There is no aliment held in higher esteem than panic by the nations of Pontus. The other summer grains thrive better in well-watered soils than in rainy localities; but water is by no means beneficial to millet or panic when they are coming into blade. It is recommended not to sow them among vines or fruit-trees, as it is generally thought that these crops impoverish the soil.

CHAP. 26. (11)—THE VARIOUS KINDS OF LEAVEN.

Millet is more particularly employed for making leaven; and if kneaded with must,[19] it will keep a whole year. The same is done, too, with the fine wheat-bran of the best quality; it is kneaded with white must three days old, and then dried in the sun, after which it is made into small cakes. When required for making bread, these cakes are first soaked in water,

[16] The Tartars still employ millet as one of their principal articles of food. They also extract a kind of wine from it.

[17] Virgil alludes to this, Georg. iii. 463.

[18] Panic is still employed more than any other grain in the south of France.

[19] Or grape-juice. This must have tended to affect the taste of the bread.

and then boiled with the finest spelt flour, after which the whole is mixed up with the meal; and it is generally thought that this is the best method of making bread. The Greeks have established a rule that for a modius of meal eight ounces of leaven is enough.

These kinds of leaven, however, can only be made at the time of vintage, but there is another leaven which may be prepared with barley and water, at any time it may happen to be required. It is first made up into cakes of two pounds in weight, and these are then baked upon a hot hearth, or else in an earthen dish upon hot ashes and charcoal, being left till they turn of a reddish brown. When this is done, the cakes are shut close in vessels, until they turn quite sour: when wanted for leaven, they are steeped in water first. When barley bread used to be made, it was leavened with the meal of the fitch,[20] or else the chicheling vetch,[21] the proportion being, two pounds of leaven to two modii and a half of barley meal. At the present day, however, the leaven is prepared from the meal that is used for making the bread. For this purpose, some of the meal is kneaded before adding the salt, and is then boiled to the consistency of porridge, and left till it begins to turn sour. In most cases, however, they do not warm it at all, but only make use of a little of the dough that has been kept from the day before. It is very evident that the principle which causes the dough to rise is of an acid nature, and it is equally evident that those persons who are dieted upon fermented bread are stronger[22] in body. Among the ancients, too, it was generally thought that the heavier wheat is, the more wholesome it is.

CHAP. 27.—THE METHOD OF MAKING BREAD: ORIGIN OF THE ART.

It seems to me quite unnecessary to enter into an account of the various kinds of bread that are made. Some kinds, we find, receive their names from the dishes with which they are eaten, the oyster-bread,[23] for instance: others, again, from their peculiar delicacy, the artolaganus,[24] or cake-bread, for example; and others from the expedition with which they are

[20] Ervum. [21] "Cicercula." See B. xxii. c. 72.
[22] This remark is founded upon just notions.
[23] Ostrearius.
[24] From ἄρτος, and λάγανον, bread and cake.

prepared, such as the "speusticus,"[25] or "hurry-bread." Other varieties receive their names from the peculiar method of baking them, such as oven-bread,[26] tin-bread,[27] and mould-bread.[28] It is not so very long since that we had a bread introduced from Parthia, known as water-bread,[29] from a method in kneading it, of drawing out the dough by the aid of water, a process which renders it remarkably light, and full of holes, like a sponge: some call this Parthian bread. The excellence of the finest kinds of bread depends principally on the goodness of the wheat, and the fineness of the bolter. Some persons knead the dough with eggs or milk, and butter even has been employed for the purpose by nations that have had leisure to cultivate the arts of peace, and to give their attention to the art of making pastry. Picenum still maintains its ancient reputation for making the bread which it was the first to invent, alica[30] being the grain employed. The flour is kept in soak for nine days, and is kneaded on the tenth with raisin juice, in the shape of long rolls; after which it is baked in an oven in earthen pots, till they break. This bread, however, is never eaten till it has been well[31] soaked, which is mostly done in milk mixed with honey.

CHAP. 28.—WHEN BAKERS WERE FIRST INTRODUCED AT ROME.

There were no bakers at Rome until[32] the war with King Perseus, more than five hundred and eighty years after the building of the City. The ancient Romans used to make their own bread, it being an occupation which belonged to the women, as we see the case in many nations even at the present day. Plautus speaks of the artopta, or bread-tin, in his Comedy of the Aulularia,[33] though there has been considerable discussion for that very reason among the learned, whether or

[25] From σπεύδω, to hasten. A sort of crumpet, probably.
[26] Furnaceus. [27] Artopticeus.
[28] "Clibanis." The clibanus was a portable oven or mould, broader at the bottom than the top.
[29] Aquaticus. [30] See cc. 10 and 29 of this Book.
[31] It would appear to be somewhat similar to our rusks.
[32] Which ended A.U.C. 586.
[33] A. ii. s. 9, l. 4. "Ego hinc artoptam ex proxumo utendam peto." It is thought by some commentators, that the word used by Pliny here was, in reality, "Artoptasia," a female baker; and that he alludes to a passage in the Aulularia, which has now perished.

not that line really belongs to him. We have the fact, too, well ascertained, in the opinion of Ateius Capito, that the cooks in those days were in the habit of making the bread for persons of affluence, while the name of "pistor"[34] was only given to the person who pounded, or "pisebat," the spelt. In those times, they had no cooks in the number of their slaves, but used to hire them for the occasion from the market. The Gauls were the first to employ the bolter that is made of horse-hair; while the people of Spain make their sieves and meal-dressers of flax,[35] and the Egyptians of papyrus and rushes.

CHAP. 29.—ALICA.

But among the very first things of all, we ought to speak of the method employed in preparing alica,[36] a most delightful and most wholesome food, and which incontestably confers upon Italy the highest rank among the countries that produce the cereals. This delicacy is prepared, no doubt, in Egypt as well, but of a very inferior quality, and not worth our notice. In Italy, however, it is prepared in numerous places, the territories of Verona and Pisæ, for example; but that of Campania is the most highly esteemed. There, at the foot of mountains capped with clouds, runs a plain, not less in all than forty miles in extent. The land here—to give a description first of the nature of the soil—is dusty on the surface, but spongy below, and as porous as pumice. The inconveniences that generally arise from the close vicinity of mountains are here converted into so many advantages: for the soil, acting on it as a sort of filter, absorbs the water of the abundant rains that fall; the consequence of which is, that the water not being left to soak or form mud on the surface, the cultivation is greatly facilitated thereby. This land does not return, by the aid of any springs, the moisture it has thus absorbed, but thoroughly digests it, by warming it in its bosom, in a heated oven as it were. The ground is kept cropped the whole year through, once with panic, and twice with spelt; and yet in the spring, when the soil is allowed to have a moment's repose,

[34] Which in Pliny's time signified "baker."

[35] The Stipa tenacissima of Linnæus, Fée says; or else the Lygeum spartum of Linnæus.

[36] As to the cereal so called, see c. 10 of this Book.

it will produce roses more odoriferous by far than the cultivated rose: for the earth here is never tired of producing, a circumstance in which originated the common saying, that Campania produces more unguents [37] than other countries do oil.

In the same degree, however, that the Campanian soil excels that of all other countries, so does that part of it which is known to us as Laboriæ,[38] and to the Greeks as Phlegræum, surpass all the rest. This district is bounded on two sides by the consular high road, which leads from Puteoli to Capua on the one side, and from Cumæ on the other.

Alica is prepared from the grain called zea, which we have already mentioned [39] as being known to us as "seed" wheat. The grain is cleansed in a wooden mortar, for fear lest stone, from its hardness, should have the effect of grating it. The motive power for raising the pestle, as is generally known, is supplied by slaves working in chains, the end of it being enclosed in a case of iron. After the husks have been removed by this process, the pure grain is broken to pieces, the same implements being employed. In this way, there are three different kinds of alica made, the finest, the seconds, and the coarse, which last is known as "aphærema."[40] Still, however, these various kinds have none of them that whiteness as yet for which they are so distinguished, though even now they are preferable to the Alexandrian alica. With this view—a most singular fact—chalk [41] is mixed with the meal, which, upon becoming well incorporated with it, adds very materially to both the whiteness and the shortness [42] of the mixture. This chalk is found between Puteoli and Neapolis, upon a hill called Leucogæum;[43] and there is still in existence a decree of the late Emperor Augustus, (who established a colony at Capua), which orders a sum of twenty thousand sesterces to be paid annually from his exchequer to the people of Neapolis, for the lease of this hill. His motive for paying this rent, he stated, was the fact that the people of Campania had alleged that it

[37] Or perfumed oils.
[38] See B. iii. c. 9. A volcanic district.
[39] In c. 20 of this Book.
[40] Grain from which the husk is removed.
[41] A sub-carbonate of lime; it is still known in those parts of Campania, and is called "lumera."
[42] Teneritatem.
[43] From the Greek, meaning "white earth."

was impossible to make their alica without the help of this mineral. In the same hill, sulphur is found as well, and the springs of Araxus issue from its declivities, the waters of which are particularly efficacious for strengthening the sight, healing wounds, and preventing the teeth from becoming loose.

A spurious kind of alica is made, more particularly of a degenerate kind of zea grown in Africa; the ears of it are larger and blacker than those of the genuine kind, and the straw is short. This grain is pounded with sand, and even then it is with the greatest difficulty that the outer coats are removed; when stripped, the grain fills one half only of the original measure. Gypsum, in the proportion of one fourth, is then sprinkled[44] over it, and after the mixture has been well incorporated, it is bolted through a meal-sieve. The portion that remains behind, after this is done, is known as "excepticia,"[45] and consists of the coarser parts; while that which has passed through is submitted to a second process, with a finer sieve; and that which then refuses to pass has the name of "secundaria."[46] That, again, which, in a similar manner, is submitted to a third sifting, with a sieve of the greatest fineness, which will only admit of sand passing through it, is known as "cribraria,"[47] when it remains on the top of the sieve.

There is another method, again, that is employed every where for adulterating it. They pick out the whitest and largest grains of wheat, and parboil them in earthen pots; these are then dried in the sun till they have regained their original size, after which they are lightly sprinkled with water, and then ground in a mill. A better granæum[48] is made from zea than from wheat, although it is nothing else, in fact, but a spurious alica: it is whitened by the addition of boiled milk, in place of chalk.

CHAP. 30. (12.)—THE LEGUMINOUS PLANTS: THE BEAN.

We now come to the history of the leguminous plants, among which the place of honour must be awarded to the

[44] Fée enquires, and with good reason, how the African mixture accommodated itself to the stomachs of those who ate it.

[45] Residue.

[46] Seconds.

[47] Sieve flour.

[48] A porridge or pap, made of ground grain. It is mentioned by Cato, c. 86.

bean ;[49] indeed, some attempts have even been made to use it for bread. Bean meal is known as "lomentum ;" and, as is the case with the meal of all leguminous plants, it adds considerably, when mixed with flour, to the weight of the bread. Beans are on sale at the present day for numerous purposes, and are employed for feeding cattle, and man more particularly. They are mixed, also, among most nations, with wheat,[50] and panic more particularly, either whole or lightly broken. In our ancient ceremonials, too, bean pottage[51] occupies its place in the religious services of the gods. Beans are mostly eaten together with other food, but it is generally thought that they dull the senses, and cause sleepless nights attended with dreams. Hence it is that the bean has been condemned[52] by Pythagoras ; though, according to some, the reason for this denunciation was the belief which he entertained that the souls of the dead are enclosed in the bean : it is for this reason, too, that beans are used in the funereal banquets of the Parentalia.[53] According to Varro, it is for a similar cause that the Flamen abstains from eating beans : in addition to which, on the blossom of the bean, there are certain letters of ill omen to be found.

There are some peculiar religious usages connected with the bean. It is the custom to bring home from the harvest a bean by way of auspice, which, from that circumstance, has the name of "referiva."[54] In sales by public auction, too, it is thought lucky to include a bean in the lot for sale. It is a fact, too, that the bean is the only one among all the grains that fills out at the increase of the moon,[55] however much it may have been eaten away : it can never be thoroughly boiled in sea-water, or indeed any other water that is salt.

[49] The Faba vulgaris of the modern naturalists. It is supposed to have originally come from Persia.

[50] It is said that this mixture is still employed in the Valais and in Savoy.

[51] Fabata.

[52] Beans were used in ancient times, in place of balls or pebbles, in voting by ballot. Hence it has been suggested that Pythagoras, in recommending his disciples to abstain from beans, meant to advise them to have nothing to do with politics.

[53] The sacrifices offered to the Manes or spirits of deceased relations. See Ovid's Fasti, B. ii. l. 565.

[54] "Brought home." The bean was offered up, to ensure good luck.

[55] Didymus, in the Geoponica, B. ii. c. 33, repeats this absurdity.

The bean is the first leguminous plant that is sown; that being done before the setting of the Vergiliæ, in order that it may pass the winter in the ground. Virgil[56] recommends that it should be sown in spring, according to the usage of the parts of Italy near the Padus: but most people prefer the bean that has been sown early to that of only three months' growth; for, in the former case, the pods as well as the stalk afford a most agreeable fodder for cattle. When in blossom more particularly, the bean requires water; but after the blossom has passed off, it stands in need of but very little. It fertilizes[57] the ground in which it has been sown as well as any manure; hence it is that in the neighbourhood of Thessaly and Macedonia, as soon as it begins to blossom, they turn up[58] the ground.

The bean, too, grows wild in most countries, as in those islands of the Northern Ocean, for instance, which for that reason have been called by us the "Fabariæ."[59] In Mauritania, also, it is found in a wild state in various parts, but so remarkably hard that it will never become soft by boiling.

In Egypt there is a kind of bean[60] which grows upon a thorny stalk; for which reason the crocodiles avoid it, being apprehensive of danger to their eyes. This stalk is four cubits in length, and its thickness, at the very most, that of the finger: were it not for the absence of articulations in it, it would resemble a soft reed in appearance. The head is similar to that of the poppy, being of a rose colour: the beans enclosed in this head are not above thirty in number; the leaves are large, and the fruit is bitter and odoriferous. The root, however, is highly esteemed by the natives as a food, whether eaten raw or well boiled; it bears a strong resemblance to that of the reed. This plant grows also in Syria and Cilicia, and upon the banks of Lake Torone in Chalcidice.

[56] Georg. i. 215.

[57] This notion still prevails, and the bean, while in blossom, is dug into the ground to manure it, both in England and France.

[58] It does not appear, however, that this was done with the view of digging in the beans.

[59] Or Bean Islands. See B. iv. c. 27.

[60] The Nymphæa nelumbo of Linnæus is alluded to, but it is no longer to be found in Egypt. Pliny is supposed to derive this from Theophrastus, Hist. Plant. B. iv. c. 10, but his translation is not exactly correct.

CHAP. 31.—LENTILS. PEASE.

Among the leguminous plants the lentil is sown in the month of November, and the pea,[61] among the Greeks. The lentil thrives best in a soil that is rather thin than rich, and mostly stands in need of dry weather. There are two kinds of lentil grown in Egypt; one of which is rounder and blacker than the other, which has a peculiar shape of its own. The name of this plant has been applied to various uses, and among others has given origin to our word "lenticula."[62] I find it stated in some authors that a lentil diet is productive of evenness of temper. The pea requires to be sown in a warm, sunny spot, and is ill able to endure cold; hence in Italy and the more rigorous climates, it is sown in the spring only, a light, loose soil being chosen for the purpose.

CHAP. 32.—THE SEVERAL KINDS OF CHICK-PEASE.

The chick-pea[63] is naturally salt,[64] for which reason it is apt to scorch the ground, and should only be sown after it has been steeped a day in water. This plant presents considerable differences in reference to size, colour,[65] form, and taste. One variety resembles in shape a ram's head, from which circumstance it has received the name of "arietinum;" there are both the white and the black arietinum. There is also the columbine chick-pea, by some known as the "pea of Venus;" it is white, round, and smooth, being smaller than the arietinum, and is employed in the observances of the night festivals or vigils. The chicheling vetch,[66] too, is a diminutive kind of chick-pea, unequal and angular, like[67] the pea. The chick-pea that is the sweetest in flavour is the one that bears the closest resemblance to the fitch; the pod in the black and the red kinds is more firmly closed than in the white ones.

[61] Pisum sativum of Linnæus.

[62] Meaning a wart or pimple on the face.

[63] Cicer arietinum of the botanists.

[64] "Gigni cum salsilagine." It abounds in India, and while blossoming, it distils a corrosive acid, which corrodes the shoes of those who tread upon it.

[65] There are still the red and the white kinds, the large and the small.

[66] Cicercula: the Lathyrus sativus of Linnæus. It is difficult to cook, and hard of digestion. See c. 26.

[67] This must be said in reference to some of the pease when in a dried state.

CHAP. 33.—THE KIDNEY-BEAN.

The pod of the chick-pea is rounded, while in other leguminous plants it is long and broad, like the seed which it contains; in the pea, again, it is of a cylindrical form. In the case of the kidney-bean[68] it is usual to eat the pod together with the seed. This last may be sown in all kinds of soils indifferently, between the ides of October[69] and the calends of November.[70] As soon as ever the leguminous plants begin to ripen, they ought to be plucked, for the pods will very soon open and the seed fall out, in which case it is very difficult to find: the same is the case, too, with the lupine. But before we pass on to the lupine, it will be as well to make some mention of the rape.[71]

CHAP. 34. (13.)—THE RAPE.

The Latin writers have only treated of this plant in a cursory manner, while those of Greece have considered it a little more attentively; though even they have ranked it among the garden plants. If, however, a methodical arrangement is to be strictly observed, it should be spoken of immediately after corn, or the bean, at all events; for next to these two productions, there is no plant that is of more extensive use. For, in the first place, all animals will feed upon it as it grows; and it is far from being the least nutritious plant in the fields for various kinds of birds, when boiled in water more particularly. Cattle, too, are remarkably fond of the leaves of rape; and the stalks and leaves, when in season, are no less esteemed as a food for man than the sprouts of the cabbage;[71] these, too, when turned yellow and left to die in the barn, are even more highly esteemed than[72] when green. As to the rape itself, it will keep all the better if left in its mould, after which it should be dried in the open air till the next crop is nearly ripe, as a resource in case of scarcity. Next to those of the

[68] A variety of the Phaseolus vulgaris of Linnæus: the "haricot" of the French. The French bean and the scarlet-runner are cooked in a similar manner among us.

[69] 15th of October. [70] 1st of November.

[71] The Napo-brassica of Linnæus. The turnip cabbage, or rape-colewort.

[72] This taste, it is most probable, is nowhere in existence at the present day.

grape and corn, this is the most profitable harvest of all for the countries that lie beyond the Padus. The rape is by no means difficult to please in soil, for it will grow almost anywhere, indeed where nothing else can be sown. It readily derives nutriment from fogs and hoar-frosts, and grows to a marvellous size; I have seen them weighing upwards of forty pounds.[73] It is prepared for table among us in several ways, and is made to keep till the next crop, its fermentation[74] being prevented by preserving it in mustard. It is also tinted with no less than six colours in addition to its own, and with purple even; indeed, that which is used by us as food ought to be of no other colour.[75]

The Greeks have distinguished two principal species of rape, the male and the female,[76] and have discovered a method of obtaining them both from the same seed; for when it is sown thick, or in a hard, cloggy soil, the produce will be male. The smaller the seed the better it is in quality. There are three kinds of rape in all; the first is broad and flat, the second of a spherical shape, and the third, to which the name of "wild" rape[77] has been given, throws out a long root, similar in appearance to a radish, with an angular, rough leaf, and an acrid juice, which, if extracted about harvest, and mixed with a woman's milk, is good for cleansing the eyes and improving defective sight. The colder the weather the sweeter they are, and the larger, it is generally thought; heat makes them run to leaf. The finest rape of all is that grown in the district of Nursia: it is valued at as much as one sesterce[78] per pound, and, in times of scarcity, two even. That of the next best quality is produced on Mount Algidus.

CHAP. 35.—THE TURNIP.

The turnip[78*] of Amiternum, which is pretty nearly of the

[73] This is not by any means an exaggeration.

[74] Acrimonia.

[75] These coloured varieties, Fée says, belong rather to the Brassica oleracea, than to the Brassica rapa. It is not improbable, from the structure of this passage, that Pliny means to say that the colours are artificially produced.

[76] In reality, belonging to the Crucifera, the rape is hermaphroditical.

[77] Wild horse-radish, which is divided into two varieties, the Raphanus raphanistrum of Linnæus, and the Cochlearia Armoracia, may possibly be meant, but their roots bear no resemblance to the radish.

[78] An enormous price, apparently.

[78*] The Brassica napus of Linnæus.

same nature as the rape, thrives equally well in a cold soil. It is sown just before the calends of March,[79] four sextarii of seed to the jugerum. The more careful growers recommend that the ground should be turned up five times before putting in the turnip, and four for rape, care being taken, in both cases, to manure it well. Rape, they say, will thrive all the better, if it is sown together with some chaff. They will have it, too, that the sower ought to be stripped, and that he should offer up a prayer while sowing, and say: "I sow this for myself and for my neighbours." The proper time for sowing both kinds is the period that intervenes between the festivals[80] of the two divinities, Neptune and Vulcan. It is said, too—and it is the result of very careful observation—that these plants will thrive wonderfully well, if they are sown as many days after the festival of Neptune as the moon was old when the first snow fell the previous winter. They are sown in spring as well, in warm and humid localities.

CHAP. 36. (14.)—THE LUPINE.

The lupine is the next among the leguminous plants that is in extensive use, as it serves for food for man in common with the hoofed quadrupeds. To prevent it from springing out of the pod[81] while being gathered, and so lost, the best plan is to gather it immediately after a shower. Of all the seeds that are sown, there is not one of a more marvellous nature than this, or more favoured by the earth. First of all, it turns every day with the sun,[82] and shows the hour to the husbandman, even though the weather should happen to be cloudy and overcast. It blossoms, too, no less than three times, and so attached is it to the earth, that it does not require to be covered with the soil; indeed, this is the only seed that does not require the earth to be turned up for sowing it. It thrives more particularly on a sandy, dry, and even gravelly soil; and requires no further care to be taken in its cultivation. To such a degree is it attached to the earth, that even

[79] 1st of March.

[80] The Neptunalia and the Vulcanalia; 23rd of July and 23rd of August.

[81] In consequence of the brittleness of the pod.

[82] This is an exaggeration of certain phænomena observed in the leaves of all leguminous plants.

though left upon a soil thickly covered with brambles, it will throw out a root amid the leaves and brakes, and so contrive to reach the ground. We have already stated[83] that the soil of a field or vineyard is enriched by the growth of a crop of lupines; indeed, so far is it from standing in need of manure, that the lupines will act upon it as well as the very best. It is the only seed that requires no outlay at all, so much so, in fact, that there is no necessity to carry it even to the spot where it is sown; for it may be sown the moment it is brought from the threshing-floor:[84] and from the fact that it falls from the pod of its own accord, it stands in need of no one to scatter it.

This is[85] the very first grain sown and the last that is gathered, both operations generally taking place in the month of September; indeed, if this is not done before winter sets in, it is liable to receive injury from the cold. And then, besides, it may even be left with impunity to lie upon the ground, in case showers should not immediately ensue and cover it in, it being quite safe from the attacks of all animals, on account of its bitter taste: still, however, it is mostly covered up in a slight furrow. Among the thicker soils, it is attached to a red earth more particularly. In order to enrich[86] this earth, it should be turned up just after the third blossom; but where the soil is sandy, after the second. Chalky and slimy soils are the only ones that it has an aversion to; indeed, it will never come to anything when sown in them. Soaked in warm water, it is used as a food, too, for man. One modius is a sufficient meal for an ox, and it is found to impart considerable vigour to cattle; placed, too, upon the abdomen[87] of children, it acts as a remedy in certain cases. It is an excellent plan to season the lupine by smoking it; for when it is kept in a moist state, maggots are apt to attack the germ, and render it useless for reproduction. If cattle have eaten it off while in leaf, as a matter of necessity it should be ploughed in as soon as possible.

[83] In B. xvii. c. 6.

[84] "Ex areâ." This reading is favoured by the text of Columella. B. ii. c. 10, who says the same. But "ex arvo," from the field, *i. e.* the "moment it is gathered"—seems preferable, as being more consistent with the context.

[85] From Theophrastus, Hist. Plant. B. viii. c. 1. 11, &c.

[86] It is still thought that the lupine enriches the soil in which it grows.

[87] Marcellus Empiricus says, that boiled lupine meal, spread as a plaster, and laid on the abdomen, will destroy intestinal worms.

CHAP. 37. (15.)—THE VETCH.

The vetch,[88] too, enriches the soil, and its cultivation entails no labour on the agriculturist. It is sown after the ground has been but once turned up, and requires neither hoeing nor manuring; nothing at all, indeed, except harrowing. There are three periods for sowing it; the first is about the setting of Arcturus, when it is intended for feeding cattle in the month of December, while in the blade; this crop, too, is the best of all for seed, for, although grazed upon, it will bear just as well. The second crop is sown in the month of January, and the last in March; this last being the best crop for fodder. Of all the seeds this is the one that thrives best in a dry soil; still, however, it manifests no repugnance to a shaded locality. This grain, if gathered when quite ripe, produces a chaff superior to that of any other. If sown near vines supported by trees, the vetch will draw away the juices from the vines, and make them languid.

CHAP. 38.—THE FITCH.

The cultivation of the fitch,[89] too, is attended with no difficulty. It requires weeding, however, more than the vetch. Like it, the fitch has certain medicinal[90] properties; for we find the fact still kept in remembrance by some letters of his, that the late Emperor Augustus was cured by its agency. Five modii will sow as much ground as a yoke of oxen can plough in a day. If sown in the month of March,[91] it is injurious, they say, to oxen: and when sown in autumn, it is apt to produce head-ache. If, however, it is put in the ground at the beginning of spring, it will be productive of no bad results.

CHAP. 39. (16.)—SILICIA.

Silicia,[92] or, in other words, fenugreek, is sown after a light ploughing[93] merely, the furrows being no more than some four

[88] Vicia sativa of Linnæus.

[89] Or orobus, the Ervum ervilia of Linnæus.

[90] It is thought by many that the ervum is unwholesome, being productive of muscular weakness. The blade of it is said to act as a poison on pigs. However, we find the farina, or meal, extolled by some persons for its medicinal qualities; and if we are to trust to the advertisements in the newspapers, it is rising rapidly in esteem. See B. xxii. c. 73.

[91] From Columella, B. ii. c. 11.

[92] Trigonella fœnum Græcum of Linnæus.

[93] "Scarificatio."

fingers in depth; the less the pains that are bestowed upon it the better it will thrive—a singular fact that there should be anything that profits from neglect. The kinds, however, that are known as "secale" and "farrago" require harrowing only.

CHAP. 40.—SECALE OR ASIA.

The people of Taurinum, at the foot of the Alps, give to secale[94] the name of "asia;" it is a very inferior[95] grain, and is only employed to avert positive famine. It is prolific, but has a straw of remarkable thinness; it is also black and sombre-looking, but weighs extremely heavy. Spelt is mixed with this grain to modify its bitterness,[96] and even then it is very disagreeable to the stomach. It will grow upon any soil, and yields a hundred-fold; it is employed also as a manure for enriching the land.

CHAP. 41.—FARRAGO: THE CRACCA.

Farrago, a mixture made of the refuse of "far," or spelt, is sown very thick, the vetch being sometimes mingled with it; in Africa, this mixture is sometimes made with barley. All these mixtures, however, are only intended for cattle, and the same is the case with the cracca,[97] a degenerate kind of leguminous plant. Pigeons, it is said, are so remarkably fond of this grain, that they will never leave the place where it has been given to them.

CHAP. 42.—OCINUM: ERVILIA.

Among the ancients there was a sort of fodder, to which Cato[98] gives the name of "ocinum;" it was employed by them to stop scouring in oxen. This was a mixture of various kinds of fodder, cut green before the frosts came on. Mamilius Sura, however, explains the term differently, and says that ten modii of beans, two of vetches, and the same quantity of ervilia,[98*] were mixed and sown in autumn on a jugerum of land. He

[94] Probably the Secale cereale of Linnæus, cultivated rye.

[95] It is now held in high esteem in many parts of Europe.

[96] Rye has no bitterness, and this assertion has led some to doubt if it is identical with the "secale" of Pliny.

[97] Perhaps identical with the Vicia cracca of Linnæus.

[98] In c. 54 and 60, and elsewhere. See B. xvii. c. 35.

[98*] Probably, fitches.

states, also, that it is a still better plan to mix some Greek oats[99] with it, the grain of which never falls to the ground; this mixture, according to him, was ocinum, and was usually sown as a food for oxen. Varro[1] informs us that it received its name on account of the celerity with which it springs up, from the Greek ὠκέως, "quickly."

CHAP. 43.—LUCERNE.

Lucerne[2] is by nature an exotic to Greece even, it having been first introduced into that country from Media,[3] at the time of the Persian wars with King Darius; still it deserves to be mentioned among the very first of these productions. So superior are its qualities, that a single sowing will last more than thirty[4] years. It resembles trefoil in appearance, but the stalk and leaves are articulated. The longer it grows in the stalk, the narrower is the leaf. Amphilochus has devoted a whole book to this subject and the cytisus.[5] The ground in which it is sown, being first cleaned and cleared of stones, is turned up in the autumn, after which it is ploughed and harrowed. It is then harrowed a second and a third time, at intervals of five days; after which manure is laid upon it. This seed requires either a soil that is dry, but full of nutriment, or else a well-watered one. After the ground has been thus prepared, the seed is put in in the month of May;[6] for if sown earlier, it is in danger from the frosts. It is necessary to sow the seed very thick, so that all the ground may be occupied, and no room left for weeds to shoot up in the intervals; a result which may be secured by sowing twenty modii to the jugerum. The seed must be stirred at once with the rake, to prevent the sun from scorching it, and it should be covered over with earth as speedily as possible. If the soil is naturally damp or weedy, the lucerne will be overpowered, and the spot

[99] Fée suggests that this may be the Avena sterilis, or else the Avena fatua of Linnæus.

[1] De Re Rust. B. i. c. 31.

[2] "Medica," in Latin, a kind of clover, the Medicago sativa of Linnæus.

[3] Fée is inclined to doubt this.

[4] Pliny exggerates here: Columella, B. ii. c. 11, says, only "ten:" a field, however, sown with it will last, with a fresh sowing, as long as twenty years.

[5] See B. xiii. c. 47.

[6] Columella, B. ii. c. 11, says April.

degenerate into an ordinary pasture; it is necessary, therefore, directly the crop is an inch in height, to disengage it from all weeds, by hand, in preference to the weeding-hook.

It is cut when it is just beginning to flower, and this is repeated as often as it throws out new blossoms; which happens mostly six[7] times in the year, and four at the very least. Care should be taken to prevent it from running to seed, as it is much more valuable as fodder, up to the third year. It should be hoed in the spring, and cleared of all other plants; and in the third year the surface should be well worked with the weeding-hook. By adopting this method, the weeds will be effectually destroyed, though without detriment to the lucerne, in consequence of the depth of its roots. If the weeds should happen to get ahead of it, the only remedy is to turn it up repeatedly with the plough, until the roots of the weeds are thoroughly destroyed. This fodder should never be given to cattle to satiety, otherwise it may be necessary to let blood; it is best, too, when used while green. When dry, it becomes tough and ligneous, and falls away at last into a thin, useless dust. As to the cytisus, which also occupies the very foremost rank among the fodders, we have already spoken[8] of it at sufficient length when describing the shrubs. It remains for us now to complete our account of all the cereals, and we shall here devote a portion of it to the diseases to which they are subject.

CHAP. 44. (17.)—THE DISEASES OF GRAIN: THE OAT.

The foremost feature of disease in wheat is the oat.[9] Barley, too, will degenerate into the oat; so much so, in fact, that the oat has become an equivalent for corn; for the people of Germany are in the habit of sowing it, and make their porridge of nothing else. This degeneracy is owing more particularly to humidity of soil and climate; and a second cause is a weakness in the seed, the result of its being retained too long in the ground before it makes its appearance above it. The same, too, will

[7] By the aid of careful watering, as many as eight to fourteen cuttings are obtained in the year, in Italy and Spain. In the north of Europe there is but one crop.

[8] In B. xiii. c. 47.

[9] He borrows this notion of the oat being wheat in a diseased state, from Theophrastus. Singularly enough, it was adopted by the learned Buffon.

be the consequence, if the seed is decayed when put in the ground. This may be known, however, the moment it makes its appearance, from which it is quite evident that the defect lies in the root. There is another form of disease, too, which closely resembles the oat, and which supervenes when the grain, already developed to its full size, but not ripe, is struck by a noxious blast, before it has acquired its proper body and strength; in this case, the seed pines away in the ear, by a kind of abortion, as it were, and totally disappears.

The wind is injurious to wheat and barley, at three[10] periods of the year in particular: when they are in blossom, directly the blossom has passed off, and just as the seed is beginning to ripen. In this last case, the grain wastes away, while in the two former ones it is prevented from being developed. Gleams of sunshine, every now and then, from the midst of clouds, are injurious to corn. Maggots, too, breed[11] in the roots, when the rains that follow the seed-time are succeeded by a sudden heat, which encloses the humidity in the ground. Maggots make their appearance,[12] also, in the grain, when the ear ferments through heat succeeding a fall of rain. There is a small beetle, too, known by the name of "cantharis,"[13] which eats away the blade. All these insects die, however, as soon as their nutriment fails them. Oil,[14] pitch, and grease are prejudicial to grain, and care should be taken not to let them come in contact with the seed that is sown. Rain is only beneficial to grain while in the blade; it is injurious to wheat and barley while they are in blossom, but is not detrimental to the leguminous plants, with the exception of the chick-pea. When grain is beginning to ripen, rain is injurious, and to barley in particular. There is a white grass[15] that grows in the fields, very similar to panic in appearance, but fatal to cattle. As to

[10] From Theophrastus, Hist. Plant. B. viii. c. 10.

[11] This but rarely happens in our climates, as Fée remarks.

[12] The grains are sometimes, though rarely, found devoured on the stalk, by a kind of larvæ.

[13] Some coleopterous insect, probably, now unknown, and not the Cantharis vesicatoria, or "Spanish fly," as some have imagined. Dioscorides and Athenæus state to the same effect as Pliny.

[14] The proper influence of the humidity of the earth would naturally be impeded by a coating of these substances.

[15] This plant has not been identified; but none of the gramineous plants are noxious to cattle, with the exception of the seed of darnel.

darnel,[16] the tribulus,[17] the thistle,[18] and the burdock,[19] I can consider them, no more than the bramble, among the maladies that attack the cereals, but rather as so many pests inflicted on the earth. Mildew,[20] a malady resulting from the inclemency of the weather, and equally attacking the vine[21] and corn, is in no degree less injurious. It attacks corn most frequently in localities which are exposed to dews, and in vallies which have not a thorough draught for the wind; windy and elevated spots, on the other hand, are totally exempt from it. Another evil, again, in corn, is over-luxuriance, when it falls to the ground beneath the weight[22] of the grain. One evil, however, to which all crops in common, the chick-pea even, are exposed, is the attacks of the caterpillar, when the rain, by washing away the natural saltness of the vegetation, makes it[23] all the more tempting for its sweetness.

There is a certain plant,[24] too, which kills the chick-pea and the fitch, by twining around them; the name of it is "orobanche." In a similar manner, also, wheat is attacked by darnel,[25] barley by a long-stalked plant, called "ægilops,"[26] and the lentil by an axe-leafed grass, to which, from the resemblance[27] of the leaf, the Greeks have given the name of "pelecinon." All these plants, too, kill the others by entwining around them. In the neighbourhood of Philippi, there is a plant known as ateramon,[28] which grows in a rich soil, and

[16] Lolium temulentum of Linnæus. [17] See B. xxi. c. 58.

[18] "Carduus." A general term, probably including the genera Centaurea (the prickly kinds), Serratula, Carduus, and Cnicus. The Centaurea solstitialis is the thistle most commonly found in the south of Europe.

[19] Gallium Aparine of Linnæus.

[20] Barley, wheat, oats, and millet have, each its own "rubigo" or mildew, known to modern botany as uredo.

[21] The Erineum vitis of botanists.

[22] This rarely happens except through the violence of wind or rain.

[23] See c. 32 of this Book.

[24] The Cuscuta Europæa, probably, of Linnæus; one of the Convolvuli.

[25] "Æra." It is generally considered to be the same with darnel, though Pliny probably looked upon them as different.

[26] The Ægilops ovata, probably, of Linnæus. Dalechamps and Hardouin identify it with the barren oat, the Avena sterilis of Linnæus.

[27] To the Greek πελέκυς, or battle-axe. It is probably the Biserrula pelecina of Linnæus, though the Astragalus hamosus and the Coronilla securidaca of Linnæus have been suggested.

[28] Pliny has here committed a singular error in translating from Theophrastus, de Causis, B. iv. c. 14, who only says that a cold wind in

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kills the bean, after it has been exposed, while wet, to the blasts of a certain wind: when it grows in a thin, light soil, this plant is called "teramon." The seed of darnel is extremely minute, and is enclosed in a prickly husk. If introduced into bread, it will speedily produce vertigo; and it is said that in Asia and Greece, the bath-keepers, when they want to disperse a crowd of people, throw this seed upon burning coals. The phalangium, a diminutive insect of the spider genus,[29] breeds in the fitch, if the winter happens to be wet. Slugs, too, breed in the vetch, and sometimes a tiny snail makes its way out of the ground, and eats it away in a most singular manner.

These are pretty nearly all the maladies to which grain is subject.

CHAP. 45.—THE BEST REMEDIES FOR THE DISEASES OF GRAIN.

The best remedy for these maladies, so long as grain is in the blade, is the weeding-hook, and, at the moment of sowing, ashes.[30] As to those diseases which develope themselves in the seed and about the root, with due care precautions may be effectually employed against them. It is generally supposed that if seed has been first steeped in wine,[31] it will be less exposed to disease. Virgil [32] recommends that beans should be drenched with nitre and amurca of olives; and he says that if this is done, they will be all the larger. Some persons, again, are of opinion, that they will grow of increased size, if the seed is steeped for three days before it is sown in a solution of urine and water. If the ground, too, is hoed three times, a modius of beans in the pod, they say, will yield not less than a modius

the vicinity of Philippi makes the beans difficult to cook or boil, *ἀτεράμονες*. From this word he has coined two imaginary plants, the "ateramon," and the "teramon." Hardouin defends Pliny, by suggesting that he has borrowed the passage from another source, while Fée doubts if he really understood the Greek language.

[29] More probably one of the Coleoptera. He borrows from Theophrastus, Hist. Anim. B. viii. c. 10.

[30] This will only prevent the young plants from becoming a prey to snails and slugs.

[31] This plan is attended with no good results.

[32] Georg. i. 193. It is generally said that if seed is steeped in a solution of nitre, and more particularly hydrochloric acid, it will germinate with accelerated rapidity; the produce, however, is no finer than at other times.

of shelled[33] beans. Other seeds, again, it is said, will be exempt from the attacks of maggots, if bruised cypress[34] leaves are mixed with them, or if they are sown just at the moon's conjunction. Many persons, for the more effectual protection of millet, recommend that a bramble-frog should be carried at night round the field before the hoeing is done, and then buried in an earthen vessel in the middle of it. If this is done, they say, neither sparrows nor worms will attack the crop. The frog, however, must be disinterred before the millet is cut; for if this is neglected, the produce will be bitter. It is pretended, too, that all seeds which have been touched by the shoulders of a mole are remarkably productive.

Democritus recommends that all seeds before they are sown should be steeped in the juice of the herb known as "aizoüm,"[35] which grows on tiles or shingles, and is known to us by the Latin name of "sedum" or "digitellum."[36] If blight prevails, or if worms are found adhering to the roots, it is a very common remedy to sprinkle the plants with pure amurca of olives without salt, and then to hoe the ground. If, however, the crop should be beginning to joint, it should be stubbed at once, for fear lest the weeds should gain the upper hand. I know for certain[37] that flights of starlings and sparrows, those pests to millet and panic, are effectually driven away by means of a certain herb, the name of which is unknown to me, being buried at the four corners of the field: it is a wonderful thing to relate, but in such case not a single bird will enter it. Mice are kept away by the ashes of a weasel or a cat being steeped in water and then thrown upon the seed, or else by using the water in which the body of a weasel or a cat has been boiled. The odour, however, of these animals makes itself perceived in the bread even; for which reason it is generally thought a better plan to steep the seed in ox-gall.[38] As for mildew, that greatest curse of all to corn, if branches of laurel are

[33] "Fractæ." Perhaps, more properly "crushed."

[34] The odour of cypress, or savin, Fée thinks, might possibly keep away noxious insects.

[35] The "always living," or perennial plant, our "house-leek," the Sedum acre of Linnæus. See B. xxv. c. 102.

[36] "Little finger," from the shape of the leaves.

[37] He must have allowed himself to be imposed upon in this case.

[38] Fée thinks that this may possibly be efficacious against the attacks of rats, as the author of the Geoponica, B. x., states.

fixed in the ground, it will pass away from the field into the leaves of the laurel. Over-luxuriance in corn is repressed by the teeth of cattle,[39] but only while it is in the blade; in which case, if depastured upon ever so often, no injury to it when in the ear will be the result. If the ear, too, is once cut off, the grain, it is well known, will assume a larger[40] form, but will be hollow within and worthless, and if sown, will come to nothing.

At Babylon, however, they cut the blade twice, and then let the cattle pasture on it a third time, for otherwise it would run to nothing but leaf. Even then, however, so fertile is the soil, that it yields fifty, and, indeed, with care, as much as a hundred, fold. Nor is the cultivation of it attended with any difficulty, the only object being to let the ground be under water as long as possible, in order that the extreme richness and exuberance of the soil may be modified. The Euphrates, however, and the Tigris do not deposit a slime, in the same way that the Nilus does in Egypt, nor does the soil produce vegetation spontaneously; but still, so great is the fertility, that, although the seed is only trodden in with the foot, a crop springs up spontaneously the following year. So great a difference in soils as this, reminds me that I ought to take this opportunity of specifying those which are the best adapted for the various kinds of grain.

CHAP. 46.—THE CROPS THAT SHOULD BE SOWN IN THE DIFFERENT SOILS.

This, then, is the opinion expressed by Cato[41] on the subject: "In a dense and fertile soil wheat should be sown: but if the locality is subject to fogs, rape, radishes, millet, and panic. Where the land[42] is cold and moist, sowing should be commenced earlier; but where it is hot, at a later period. In a red, black, or gravelly soil, provided it is not watery, lupines should be sown; but in chalk, red earth, or a watery soil, spelt.[43] Where a locality is dry, free from weeds, and not overshadowed, wheat should be put in; and where the soil is

[39] Virgil, Georg. i. 111, recommends the same plan, and it is still followed by agriculturists. It is not without its inconveniences, however.

[40] This is not consistent with truth, for no fresh ear will assume its place.

[41] De Re Rust. c. 6. [42] De Re Rust. c. 34.

[43] "Ador." See c. 10 of this Book.

strong and powerful, beans. Vetches should be grown in a soil as free from water and weeds as possible; while wheat and winter wheat are best adapted to an open, elevated locality, fully exposed to the warmth of the sun. The lentil thrives best in a meagre, red earth, free from weeds. Barley is equally suited for fallow land and for a soil that is not intended to be fallow, and three-month wheat, for a soil upon which a crop of ordinary wheat would never ripen, but strong enough to bear."

The following, too, is sound advice:[44] Those plants should be sown in a thin soil which do not stand in need of much nutriment, the cytisus, for instance, and such of the leguminous plants, with the exception of the chick-pea, as are taken up by the roots and not cut. From this mode of gathering them —"legere"—the legumina derive their name. Where it is a rich earth, those plants should be grown which require a greater proportion of nutriment, coleworts for instance, wheat, winter-wheat, and flax. The result, then, will be, that a light soil will be given to barley—the root of that grain standing in need of less nutriment—while a more dense, though easily-worked soil, will be assigned to wheat. In humid localities spelt should be sown in preference to wheat; but where the soil is of moderate temperature, either wheat or barley may be grown. Declivities produce a stronger growth of wheat, but in smaller quantities. Spelt and winter-wheat adopt a moist, cretaceous soil in preference to any other.

(18.) The only occasion on which there ever was a prodigy connected with grain, at least that I am aware of, was in the consulship of P. Ælius and Cneius Cornelius, the year[45] in which Hannibal was vanquished: on that occasion, we find it stated, corn was seen growing upon trees.[46]

CHAP. 47.—THE DIFFERENT SYSTEMS OF CULTIVATION EMPLOYED BY VARIOUS NATIONS.

As we have now spoken at sufficient length of the several varieties of grain and soil, we shall proceed to treat of the methods adopted in tilling the ground, taking care, in the very

[44] From Varro; De Re Rust. i. 23.

[45] A.U.C. 553.

[46] There is nothing wonderful in a few grains of corn germinating in the cleft of a tree.

first place, to make mention of the peculiar facilities enjoyed by Egypt in this respect. In that country, performing the duties of the husbandman, the Nile begins to overflow, as already stated,[47] immediately after the summer solstice or the new moon, gradually at first, but afterwards with increased impetuosity, as long as the sun remains in the sign of Leo. When the sun has passed into Virgo, the impetuosity of the overflow begins to slacken, and when he has entered Libra the river subsides. Should it not have exceeded twelve cubits in its overflow, famine is the sure result; and this is equally the case if it should chance to exceed sixteen; for the higher it has risen, the more slowly it subsides, and, of course, the seed-time is impeded in proportion. It was formerly a very general belief that immediately upon the subsiding of the waters the Egyptians were in the habit of driving herds of swine over the ground, for the purpose of treading the seed into the moist soil—and it is my own impression that this was done in ancient times. At the present day even, the operation is not attended with much greater labour. It is well known, however, that the seed is first laid upon the slime that has been left by the river on its subsidence, and then ploughed in; this being done at the beginning of November. After this is done, a few persons are employed in stubbing, an operation known there as "botanismos." The rest of the labourers, however, have no occasion to visit the land again till a little before the calends of April,[48] and then it is with the reaping-hook. The harvest is completed in the month of May. The stem is never so much as a cubit in length, as there is a stratum of sand beneath the slime, from which last alone the grain receives its support. The best wheat of all is that of the region of Thebais, Egypt[49] being of a marshy character.

The method adopted at Seleucia in Babylonia is very similar to this, but the fertility there is still greater, owing to the overflow of the Euphrates and Tigris,[50] the degree of irrigation being artificially modified in those parts. In Syria, too, the furrows are made extremely light, while in many parts of

[47] In B. v. c. 10.

[48] First of April.

[49] *I. e.* Egypt Proper, the Delta, or Lower Egypt, Thebais being in Upper Egypt.

[50] The overflow of these rivers is by no means to be compared with that of the Nile.

Italy, again, it takes as many as eight oxen to pant and blow at a single plough. All the operations of agriculture, but this in particular, should be regulated by the oracular precept—"Remember that every locality has its own tendencies."

CHAP. 48.—THE VARIOUS KINDS OF PLOUGHS.

Ploughs are of various kinds. The coulter[51] is the iron part that cuts up the dense earth before it is broken into pieces, and traces beforehand by its incisions the future furrows, which the share, reversed,[52] is to open out with its teeth. Another kind—the common plough-share—is nothing more than a lever, furnished with a pointed beak; while another variety, which is only used in light, easy soils, does not present an edge projecting from the share-beam throughout, but only a small point at the extremity. In a fourth kind again, this point is larger and formed with a cutting edge; by the agency of which implement, it both cleaves the ground, and, with the sharp edges at the sides, cuts up the weeds by the roots. There has been invented, at a comparatively recent period, in that part of Gaul[53] known as Rhætia, a plough with the addition of two small wheels, and known by the name of "plaumorati."[54] The extremity of the share in this has the form of a spade: it is only used, however, for sowing in cultivated lands, and upon soils which are nearly fallow. The broader the plough-share, the better it is for turning up the clods of earth. Immediately after ploughing, the seed is put into the ground, and then harrows[55] with long teeth are drawn over it. Lands which have been sown in this way require no hoeing, but two or three pairs of oxen are employed in ploughing. It is a fair estimate to consider that a single yoke of oxen can work forty jugera of land in the year, where the soil is light, and thirty where it is stubborn.

CHAP. 49. (19.)—THE MODE OF PLOUGHING.

In ploughing, the most rigid attention should be paid to the

[51] Fée remarks, that the plough here described differs but little from that used in some provinces of France. [52] Resupinus.

[53] Gallia Togata. Rhætia is the modern country of the Grisons.

[54] According to Goropius Becanus, from *plograt*, the ancient Gallic for a plough-wheel. Hardouin thinks that it is from the Latin "plaustra rati;" and Poinsinet derives it from the Belgic *ploum*, a plough, and *rat*, or *radt*, a wheel.

[55] "Crates;" probably made of hurdles; see Virgil, Georg. i. 95.

oracular precepts given by Cato[55] on the subject. "What is the essence of good tillage? Good ploughing. What is the second point? Ploughing again. What is the third point? Manuring. Take care not to make crooked furrows. Be careful to plough at the proper time." In warm localities it is necessary to open the ground immediately after the winter solstice, but where it is cold, directly after the vernal equinox: this, too, should be done sooner in dry districts than in wet ones, in a dense soil than a loose one, in a rich land than a meagre one. In countries where the summers are hot and oppressive, the soil cretaceous or thin, it is the best plan to plough between the summer solstice and the autumnal equinox. Where, on the other hand, the heat is moderate, with frequent falls of rain, and the soil rich and full of vegetation, the ploughing should be done during the prevalence of the heat. A deep, heavy soil, again, should be ploughed in winter; but one that is very thin and dry, only just before putting in the seed.

Tillage, too, has its own particular rules[56]—Never touch the ground while it is wet and cloggy; plough with all your might; loosen the ground before you begin to plough. This method has its advantages, for by turning up the clods the roots of the weeds are killed. Some persons recommend that in every case the ground should be turned up immediately after the vernal equinox. Land that has been ploughed once in spring, from that circumstance has the name of "vervactum."[57] This, too, is equally necessary in the case of fallow land, by which term is meant land that is sown only in alternate years. The oxen employed in ploughing should be harnessed as tightly as possible, to make them plough with their heads up; attention paid to this point will prevent them from galling the neck. If it is among trees and vines that you are ploughing, the oxen should be muzzled, to prevent them from eating off the tender buds. There should be a small bill-hook, too, projecting from the plough-tail, for the purpose of cutting up the roots; this plan being preferable to that of turning them up with the share, and so straining the oxen. When ploughing, finish the furrow at one spell, and never stop to take breath in the middle.

[55] De Re Rust. c. 61.

[56] These rules are borrowed mostly from Varro, B. i. c. 19, and Columella, B. ii. c. 4.

[57] "Vere actum;" "worked in spring."

It is a fair day's work to plough one jugerum, for the first time, nine inches in depth; and the second time, one jugerum and a half—that is to say, if it is an easy soil. If this, however, is not the case, it will take a day to turn up half a jugerum for the first time, and a whole jugerum the second; for Nature has set limits to the powers of animals even. The furrows should be made, in every case, first in a straight line, and then others should be drawn, crossing them obliquely.[58] Upon a hill-side the furrows are drawn transversely[59] only, the point of the share inclining upwards at one moment and downwards[60] at another. Man, too, is so well fitted for labour, that he is able to supply the place of the ox even; at all events, it is without the aid of that animal that the mountain tribes plough, having only the hoe to help them.[61]

The ploughman, unless he stoops to his work, is sure to prevaricate,[62] a word which has been transferred to the Forum, as a censure upon those who transgress—at any rate, let those be on their guard against it, where it was first employed. The share should be cleaned every now and then with a stick pointed with a scraper. The ridges that are left between every two furrows, should not be left in a rough state, nor should large clods be left protruding from the ground. A field is badly ploughed that stands in need of harrowing after the seed is in; but the work has been properly done, when it is impossible to say in which direction the share has gone. It is a good plan, too, to leave a channel every now and then, if the nature of the spot requires it, by making furrows of a larger size, to draw off the water into the drains.

(20.) After the furrows have been gone over again transversely, the clods are broken, where there is a necessity for it, with either the harrow or the rake;[63] and this operation is repeated

[58] Virgil says the same, Georg. i. 9.

[59] Crosswise, or horizontally.

[60] Zig-zag, apparently.

[61] A rude foreshadowing of the spade husbandry so highly spoken of at the present day.

[62] "Prevaricare," "to make a balk," as we call it, to make a tortuous furrow, diverging from the straight line.

[63] He probably means the heavy "rastrum," or rake, mentioned by Virgil, Georg, i. 164. It is impossible to say what was the shape of this heavy rake, or how it was used. Light, or hand rakes were in common use as well.

after the seed has been put in. This last harrowing is done, where the usage of the locality will allow of it, with either a toothed harrow, or else a plank attached to the plough. This operation of covering in the seed is called "lirare," from which is derived the word "deliratio."[64] Virgil,[65] it is generally thought, intends to recommend sowing after *four* ploughings, in the passage where he says that land will bear the best crop, which has twice felt the sun and twice the cold. Where the soil is dense, as in most parts of Italy, it is a still better plan to go over the ground five times before sowing; in Etruria, they give the land as many as nine ploughings first. The bean, however, and the vetch may be sown with no risk, without turning up the land at all; which, of course, is so much labour saved.

We must not here omit to mention still one other method of ploughing, which the devastations of warfare have suggested in Italy that lies beyond the Padus. The Salassi,[66] when ravaging the territories which lay at the foot of the Alps, made an attempt to lay waste the crops of panic and millet that were just appearing above the ground. Finding, however, that Nature resisted all their endeavours, they passed the plough over the ground, the result of which was that the crops were more abundant than ever; and this it was that first taught us the method of ploughing in, expressed by the word "artrare," otherwise "aratrare," in my opinion the original form. This is done either just as the stem begins to develope itself, or else when it has put forth as many as two or three leaves. Nor must we withhold from the reader a more recent method, which was discovered the year but one before this,[67] in the territory of the Treviri. The crops having been nipped by the extreme severity of the winter, the people sowed the land over again in the month of March, and had a most abundant harvest.

We shall now proceed to a description of the peculiar methods employed in cultivating each description of grain.

[64] "A gong crooked;" hence its meaning of, folly, dotage, or madness.

[65] Georg. i. 47. Servius seems to understand it that the furrow should be untouched for two days and two nights before it is gone over again.

[66] Fée declines to give credit to this story.

[67] A.U.C. 830.

CHAP. 50. (21.)—THE METHODS OF HARROWING, STUBBING, AND HOEING, EMPLOYED FOR EACH DESCRIPTION OF GRAIN. THE USE OF THE HARROW.

For winter wheat, spelt, wheat, zea,[68] and barley, harrow, hoe and stub upon the days which will be mentioned[69] in the sequel. A single hand per jugerum will be quite enough for any one of these kinds of grain. The operation of hoeing loosens the ground in spring when it has been hardened and saddened by the rigours of the winter, and admits the early sun to the interior. In hoeing, every care must be taken not to go beneath the roots of the corn; in the case of wheat, zea, and barley, it is best to give a couple of hoeings. Stubbing,[70] when the crop is just beginning to joint, cleanses it of all noxious weeds, disengages the roots of the corn, and liberates the growing blade from the clods. Among the leguminous plants, the chick-pea requires the same treatment that spelt does. The bean requires no stubbing, being quite able of itself to overpower all weeds; the lupine, too, is harrowed only. Millet and panic are both harrowed and hoed; but this operation is never repeated, and they do not require stubbing. Fenugreek and the kidney-bean require harrowing only.

There are some kinds of ground, the extreme fertility of which obliges the grower to comb down the crops while in the blade—this is done with a sort of harrow[71] armed with pointed iron teeth—and even then he is obliged to depasture cattle upon them. When, however, the blade has been thus eaten down, it stands in need of hoeing to restore it to its former vigour.

But in Bactria, and at Cyrenæ in Africa, all this trouble has been rendered quite unnecessary by the indulgent benignity of the climate, and after the seed is in, the owner has no occasion to return to the field till the time has come for getting in the harvest. In those parts the natural dryness of the soil prevents noxious weeds from springing up, and, aided by the night dews alone, the soil supplies its nutriment to the grain. Virgil[72] recommends that the ground should be left to enjoy repose every other year; and this, no doubt, if the extent of the farm will admit of it, is the most advantageous plan. If, however, cir-

[68] "Semen," "seed-wheat," a variety only of spelt.
[69] In c. 65 of this Book.
[70] Runcatio.
[71] Crates.
[72] Georg. i. 71.

cumstances will not allow of it, spelt should be sown upon the ground that has been first cropped with lupines, vetches, or beans; for all these have a tendency to make the soil more fertile. We ought to remark here more particularly, that here and there certain plants are sown for the benefit of others, although, as already stated in the preceding Book,[73] not to repeat the same thing over again, they are of little value themselves. But it is the nature of each soil that is of the greatest importance.

CHAP. 51. (22.)—EXTREME FERTILITY OF SOIL.

There is a city of Africa, situate in the midst of the sands as you journey towards the Syrtes and Great Leptis, Tacape[74] by name. The soil there, which is always well-watered, enjoys a degree of fertility quite marvellous. Through this spot, which extends about three miles each way, a spring of water flows—in great abundance it is true—but still, it is only at certain hours that its waters are distributed among the inhabitants. Here, beneath a palm of enormous size, grows the olive, beneath the olive the fig, beneath the fig, again, the pomegranate, beneath the pomegranate the vine, and beneath the vine we find sown, first wheat, then the leguminous plants, and after them garden herbs—all in the same year, and all growing beneath another's shade. Four cubits square of this same ground—the cubit[75] being measured with the fingers contracted and not extended—sell at the rate of four denarii.[76] But what is more surprising than all, is the fact that here the vine bears twice, and that there are two vintages in the year. Indeed, if the fertility of the soil were not distributed in this way among a multitude of productions, each crop would perish from its own exuberance: as it is, there is no part of the year that there is not some crop or other being gathered in; and yet, it is a well-known fact, that the people do nothing at all to promote this fruitfulness.

[73] In B. xvii. c. 7.

[74] See B. v. c. 3, and B. xvi. c. 50. It is also mentioned by Ptolemy and Procopius. It was situate evidently in an oasis.

[75] Or arm's length from the elbow.

[76] He surely does not mention this as an extravagant price, more especially when he has so recently spoken (i c. 34) of rape selling at a sesterce per pound

There are very considerable differences, too, in the nature of water, as employed for the purposes of irrigation. In the province of Gallia Narbonensis there is a famous fountain, Orge by name; within it there grow plants which are sought for with such eagerness by the cattle, that they will plunge over head into the water to get at them; it is a well ascertained[77] fact, however, that these plants, though growing in the water, receive their nutriment only from the rains that fall. It is as well then that every one should be fully acquainted with the nature, not only of the soil, but of the water too.

CHAP. 52. (23.)—THE METHOD OF SOWING MORE THAN ONCE IN THE YEAR.

If the soil is of that nature which we have already[78] spoken of as "tender,"[79] after a crop of barley has been grown upon it, millet may be sown, and after the millet has been got in, rape. In succession to these, again, barley may be put in, or else wheat, as in Campania; and it will be quite enough, in such case, to plough the ground when the seed is sown. There is another rotation again—when the ground has been cropped with spelt,[80] it should lie fallow the four winter months; after which, spring beans should be put in, to keep it occupied till the time comes for cropping it with winter beans. Where the soil is too rich, it may lie fallow one year, care being taken after sowing it with corn to crop it with the leguminous plants the third year.[81] Where, on the other hand, it is too thin, the land should lie fallow up to the third year even. Some persons recommend that corn should never be sown except in land which has lain fallow the year before.

CHAP. 53.—THE MANURING OF LAND.

The proper method of manuring is here a very important subject for consideration—we have already treated of it at some length in the preceding Book.[82] The only point that is

[77] How was this ascertained? Fée seems to think that it is the Festuca fluitans of Linnæus that is alluded to, it being eagerly sought by cattle.

[78] In B. xvii. c. 3.

[79] Tenerum.

[80] Adoreum.

[81] "Tertio" may possibly mean the "third time," *i. e.* for every third crop.

[82] In B. xvii. c. 6.

universally agreed upon is, that we must never sow without first manuring the ground; although in this respect even there are certain rules to be observed. Millet, panic, rape, and turnips should never be sown in any but a manured soil. If, on the other hand, the land is not manured, sow wheat there in preference to barley. The same, too, with fallow lands; though in these it is generally recommended that beans should be sown. It should be remembered, however, that wherever beans are sown, the land should have been manured at as recent a period as possible. If it is intended to crop ground in autumn, care must be taken to plough in manure in the month of September, just after rain has fallen. In the same way, too, if it is intended to sow in spring, the manure should be spread in the winter. It is the rule to give eighteen cart-loads of manure to each jugerum, and to spread it well before ploughing it in,[83] or sowing the seed.[84] If this manuring, however, is omitted, it will be requisite to spread the land with aviary dust just before hoeing is commenced. To clear up any doubts with reference to this point, I would here observe that the fair price for a cart-load of manure is one denarius; where, too, sheep furnish one cart-load, the larger cattle should furnish ten:[85] unless this result is obtained, it is a clear proof that the husbandman has littered his cattle badly.

There are some persons who are of opinion that the best method of manuring land is to pen sheep there, with nets erected to prevent them from straying. If land is not manured, it will get chilled; but if, on the other hand, it is overmanured, it becomes burnt up: it is a much better plan, too, to manure little and often than in excess. The warmer the soil is by nature, the less manure it requires.

CHAP. 54. (24.)—HOW TO ASCERTAIN THE QUALITY OF SEED.

The best seed of all is that which is of the last year's growth. That which is two years old is inferior, and three the worst of all

[83] "Ares" seems to be a preferable reading to "arescat," "before it dries."

[84] Schneider, upon Columella, B. ii. c. 15, would reject these words, and they certainly appear out of place.

[85] Poinsinet would supply here "tricenis diebus," "in thirty days," from Columella, B. ii. c. 15.

—beyond that, it is unproductive.[86] The same definite rule which applies to one kind of seed is applicable to them all: the seed which falls to the bottom[87] on the threshing-floor, should be reserved for sowing, for being the most weighty it is the best in quality: there is no better method, in fact, of ascertaining its quality. The grains of those ears which have intervals between the seed should be rejected. The best grain is that which has a reddish hue,[88] and which, when broken between the teeth, presents the same[89] colour; that which has more white within is of inferior quality. It is a well-known fact that some lands require more seed than others, from which circumstance first arose a superstition that exists among the peasantry; it is their belief that when the ground demands the seed with greater avidity than usual, it is famished, and devours the grain. It is consistent with reason to put in the seed where the soil is humid sooner than elsewhere, to prevent the grain from rotting in the rain: on dry spots it should be sown later, and just before the fall of a shower, so that it may not have to lie long without germinating and so come to nothing. When the seed is put in early it should be sown thick, as it is a considerable time before it germinates; but when it is put in later, it should be sown thinly, to prevent it from being suffocated. There is a certain degree of skill, too, required in scattering the seed evenly; to ensure this, the hand must keep time[90] with the step, moving always with the right foot. There are certain persons, also, who have a secret method[91] of their own, having been born[92] with a happy hand which imparts fruitfulness to the grain. Care should be taken not to sow seed in a warm locality which has been grown in a cold

[86] "Sterile." This is not necessarily the case, as we know with reference to what is called mummy wheat, the seed of which has been recovered at different times from the Egyptian tombs.

[87] The threshing floor was made with an elevation in the middle, and the sides on an incline, to the bottom of which the largest grains would be the most likely to fall.

[88] "Far" or spelt is of a red hue in the exterior.

[89] This appearance is no longer to be observed, if, indeed, Pliny is correct: all kinds of corn are white in the interior of the grain.

[90] Hand-sowing is called by the French, "semer à la volée."

[91] This occult or mysterious method of which Pliny speaks, consists solely of what we should call a "happy knack," which some men have of sowing more evenly than others.

[92] Sors genialis atque fecunda est.

one, nor should the produce of an early soil be sown in a late one. Those who give advice to the contrary have quite misapplied their pains.

CHAP. 55.—WHAT QUANTITY OF EACH KIND OF GRAIN IS REQUISITE FOR SOWING A JUGERUM.

[96]In a soil of middling quality, the proper proportion of seed is five modii of wheat or winter-wheat to the jugerum, ten of spelt or of seed-wheat—that being the name which we have mentioned[94] as being given to one kind of wheat—six of barley, one-fifth more of beans than of wheat, twelve of vetches, three of chick-pease, chicheling vetches, and pease, ten of lupines, three of lentils—(these last, however, it is said, must be sown with dry manure)—six of fitches, six of fenugreek, four of kidney-beans, twenty of hay grass,[95] and four sextarii of millet and panic. Where the soil is rich, the proportion must be greater, where it is thin, less.[96]

There is another distinction, too, to be made; where the soil is dense, cretaceous, or moist, there should be six modii of wheat or winter-wheat to the jugerum, but where the land is loose, dry, and prolific, four will be enough. A meagre soil, too, if the crop is not very thinly sown, will produce a diminutive, empty ear. Rich lands give a number of stalks to each grain, and yield a thick crop from only a light sowing. The result, then, is, that from four to six modii must be sown, according to the nature of the soil; though there are some who make it a rule that five modii is the proper proportion for sowing, neither more nor less, whether it is a densely-planted locality, a declivity, or a thin, meagre soil. To this subject bears reference an oracular precept which never can be too carefully observed[97]—"Don't rob the harvest."[98] Attius, in his Praxidicus,[99] has added that the proper time for sowing is,

[93] This Chapter is mostly from Columella, B. ii. c. 9.

[94] In c. 19 of this Book.

[95] Probably the mixture called "farrago" in c. 10 and c. 41.

[96] Upon this point the modern agriculturists are by no means agreed.

[97] From Cato, De Re Rust. c. 5.

[98] "Segetem ne defrudes." The former editions mostly read "defruges," in which case the meaning would be, "don't exhaust the land."

[99] This passage of Attius is lost, but Hermann supposes his words to have run thus:—

———serere, cum est
Luna in Ariete, Geminis, Leone, Libra, Aquario.

when the moon is in Aries, Gemini, Leo, Libra, and Aquarius. Zoroaster says it should be done when the sun has passed twelve degrees of Scorpio, and the moon is in Taurus.

CHAP. 56.—THE PROPER TIMES FOR SOWING.

We now come to a subject which has been hitherto deferred by us, and which requires our most careful attention—the proper times for sowing. This is a question that depends in a very great degree upon the stars; and I shall therefore make it my first care to set forth all the opinions that have been written in reference to the subject. Hesiod, the first writer who has given any precepts upon agriculture, speaks of one period only for sowing—the setting of the Vergiliæ: but then he wrote in Bœotia, a country of Hellas, where, as we have already stated,[1] they are still in the habit of sowing at that period.

It is generally agreed by the most correct writers, that with the earth, as with the birds and quadrupeds, there are certain impulses for reproduction; and the epoch for this is fixed by the Greeks at the time when the earth is warm and moist. Virgil[2] says that wheat and spelt should be sown at the setting of the Vergiliæ, barley between the autumnal equinox and the winter solstice, and vetches,[3] kidney-beans, and lentils at the setting of Boötes:[4] it is of great importance, therefore, to ascertain the exact days of the rising and setting of these constellations, as well as of the others. There are some, again, who recommend the sowing to be done before the setting of the Vergiliæ, but only in a dry soil, and in those provinces where the weather is hot; for the seed, they say,[5] if put in the ground will keep, there being no moisture to spoil it, and within a single day after the next fall of rain, will make its appearance above ground. Others, again, are of opinion that sowing should begin about seven days after the setting of the Vergiliæ, a period which is mostly followed by rain. Some think that cold soils should be sown immediately after the autumnal equinox, and a warm soil later, so that the blade may not put forth too luxuriantly before winter.

It is universally agreed, however, that the sowing should

[1] In c. 8 of this Book.
[2] Georg. i. 208.
[3] Georg. i. 227
[4] See c. 74 of this Book.
[5] Columella, B. ii. c. 8.

not be done about the period of the winter solstice; for this very good reason—the winter seeds, if put in before the winter solstice, will make their appearance above ground on the seventh day, whereas, if they are sown just after it, they will hardly appear by the fortieth. There are some, however, who begin very early, and have a saying to justify their doing so, to the effect that if seed sown too early often disappoints, seed put in too late always does so. On the other hand, again, there are some who maintain that it is better to sow in spring than in a bad autumn; and they say that if they find themselves obliged to sow in spring, they would choose the period that intervenes between the prevalence of the west winds[6] and the vernal equinox. Some persons, however, take no notice of the celestial phenomena, and only regulate their movements by the months. In spring they put in flax, the oat, and the poppy, up to the feast of the Quinquatria,[7] as we find done at the present day by the people of Italy beyond the Padus. There, too, they sow beans and winter-wheat in the month of November, and spelt at the end of September, up to the ides of October:[8] others, however, sow this last after the ides of October, as late as the calends of November.[9]

The persons who do this take no notice, consequently, of the phænomena of Nature, while others, again, lay too much stress upon them, and hence, by these refined subtleties and distinctions, only add to their blindness; for here are ignorant rustics, not only dealing with a branch of learning, but that branch astronomy! It must still, however, be admitted that the observation of the heavens plays a very important part in the operations of agriculture; and Virgil,[10] we find, gives it as his advice, that before any thing else, we should learn the theory of the winds, and the revolutions of the stars; for, as he says, the agriculturist, no less than the mariner, should regulate his movements thereby. It is an arduous attempt, and almost beyond all hope of success, to make an endeavour to introduce the divine science of the heavens to the uninformed

[6] Favonius. See B. ii. c. 47.

[7] The five days' festival in honour of Minerva. It begins on the fourteenth before the calends of April, or on the nineteenth of March. Virgil, Georg. i. 208, says that flax and the poppy should be sown in autumn.

[8] Fifteenth of October

[9] First of November.

[10] Georg. i. 204.

mind of the rustic; still, however, with a view to such vast practical results as must be derived from this kind of knowledge, I shall make the attempt. There are some astronomical difficulties, however, which have been experienced by the learned even, that ought to be first submitted for consideration, in order that the mind may feel some encouragement on abandoning the study of the heavens, and may be acquainted with facts at least, even though it is still unable to see into futurity.

CHAP. 57. (25.)—ARRANGEMENT OF THE STARS ACCORDING TO THE TERRESTRIAL DAYS AND NIGHTS.

In the first place, it is almost an utter impossibility to calculate with a fair degree of accuracy the days of the year and the movements of the sun. To the three hundred and sixty-five days there are still to be added the intercalary days, the result of the additional quarters of a day and night: hence it is, that it is found impossible to ascertain with exactness the proper periods for the appearance of the stars. To this we must add, too, a certain degree of uncertainty connected with these matters, that is universally admitted; thus, for instance, bad and wintry weather will often precede, by several days, the proper period for the advent of that season, a state of things known to the Greeks as προχειμάζειν;[11] while at another time, it will last longer than usual, a state of circumstances known as ἐπιχειμάζειν.[12] The effects, too, of the changes that take place in the seasons will sometimes be felt later, and at other times earlier, upon their reaching the face of the earth; and we not unfrequently hear the remark made, upon the return of fine weather, that the action of such and such a constellation is now completed.[13] And then, again, as all these phænomena depend upon certain stars, arranged and regulated in the vault of heaven, we find intervening, in accordance with the movements of certain stars, hailstorms and showers, themselves productive of no slight results, as we have already observed,[14] and apt to interfere with the anticipated regular recurrence of the seasons. Nor are we to suppose that these disappointments fall upon the human race only, for other animated beings, as well as ourselves,

[11] "To be an early winter."
[12] "To be a long winter."
[13] Confectum sidus.
[14] In B. xvii. c. 2.

are deceived in regard to them, although endowed with even a greater degree of sagacity upon these points than we are, from the fact of their very existence depending so materially upon them. Hence it is, that we sometimes see the summer birds killed by too late or too early cold, and the winter birds by heat coming out of the usual season. It is for this reason, that Virgil [15] has recommended us to study the courses of the planets, and has particularly warned us to watch the passage of the cold star Saturn.

There are some who look upon the appearance of the butterfly as the surest sign of spring, because of the extreme delicacy of that insect. In this present year,[16] however, in which I am penning these lines, it has been remarked that the flights of butterflies have been killed three several times, by as many returns of the cold; while the foreign birds, which brought us by the sixth of the calends of February [17] every indication of an early spring, after that had to struggle against a winter of the greatest severity. In treating of these matters, we have to meet a twofold difficulty: first of all, we have to ascertain whether or not the celestial phænomena are regulated by certain laws, and then we have to seek how to reconcile those laws with apparent facts. We must, however, be more particularly careful to take into account the convexity of the earth, and the differences of situation in the localities upon the face of the globe; for hence it is, that the same constellation shows itself to different nations at different times, the result being, that its influence is by no means perceptible everywhere at the same moment. This difficulty has been considerably enhanced, too, by various authors, who, after making their observations in different localities, and indeed, in some instances, in the same locality, have yet given us varying or contradictory results.

There have been three great schools of astronomy, the Chaldæan, the Ægyptian, and the Grecian. To these has been added a fourth school, which was established by the Dictator Cæsar among ourselves, and to which was entrusted the duty of regulating the year in conformity with the sun's revolution,[18] under the auspices of Sosigenes, an astronomer of considerable learning and skill. His theory, too, upon the discovery of certain errors, has since been corrected, no intercalations having

[15] Georg. i. 335.
[16] A.U.C. 830.
[17] Twenty-seventh of January.
[18] Ad solis cursum.

been made for twelve [19] successive years, upon its being found that the year which before had anticipated the constellations, was now beginning to fall behind them. Even Sosigenes himself, too, though more correct than his predecessors, has not hesitated to show, by his continual corrections in the three several treatises which he composed, that he still entertained great doubts on the subject. The writers, too, whose names are inserted at the beginning of this work,[20] have sufficiently revealed the fact of these discrepancies, the opinions of one being rarely found to agree with those of another. This, however, is less surprising in the case of those whose plea is the difference of the localities in which they wrote. But with reference to those who, though living in the same country, have still arrived at different results, we shall here mention one remarkable instance of discrepancy. Hesiod—for under his name, also, we have a treatise extant on the Science of the Stars [21]—has stated that the morning setting of the Vergiliæ takes place at the moment of the autumnal equinox; whereas Thales, we find, makes it the twenty-fifth day after the equinox, Anaximander the twenty-ninth, and Euctemon the forty-eighth.

As for ourselves, we shall follow the calculations made by Julius Cæsar,[22] which bear reference more particularly to Italy; though at the same time, we shall set forth the dicta of various other writers, bearing in mind that we are treating not of an individual country, but of Nature considered in her totality. In doing this, however, we shall name, not the writers themselves, for that would be too lengthy a task, but the countries in reference to which they speak. The reader must bear in mind, then, that for the sake of saving space, under the head of Attica, we include the islands of the Cyclades as well; under that of Macedonia, Magnesia and Thracia; under that of Egypt,

[19] Soon after the corrections made by order of Julius Cæsar, the Pontifices mistook the proper method of intercalation, by making it every third year instead of the fourth; the consequence of which was, that Augustus was obliged to correct the results of their error by omitting the intercalary day for twelve years.

[20] He most probably refers to the list of writers originally appended to the First Book; but which in the present Translation is distributed at the end of each Book. For the list of astronomical writers here referred to, see the end of the present Book.

[21] Or Ἀστρικὴ βίβλος. It is now lost.

[22] In his work mentioned at the end of this Book. It is now lost.

Phœnice, Cyprus, and Cilicia; under that of Bœotia, Locris, Phocis, and the adjoining countries; under that of Hellespont, Chersonesus, and the contiguous parts as far as Mount Athos; under that of Ionia, Asia[23] and the islands of Asia; under that of Peloponnesus, Achaia, and the regions lying to the west of it. Chaldæa, when mentioned, will signify Assyria and Babylonia, as well.

My silence as to Africa,[24] Spain, and the provinces of Gaul, will occasion no surprise, from the fact that no one has published any observations made upon the stars in those countries. Still, however, there will be no difficulty in calculating them, even for these regions as well, on reference being made to the parallels which have been set forth in the Sixth Book.[25] By adopting this course, an accurate acquaintance may be made with the astronomical relations, not only of individual nations, but of cities even as well. By taking the circular parallels which we have there appended to the several portions of the earth respectively, and applying them to the countries in question, that are similarly situate, it will be found that the rising of the heavenly bodies will be the same for all parts within those parallels, where the shadows projected are of equal length. It is also deserving of remark, that the seasons have their periodical recurrences, without any marked difference, every four years, in consequence of the influence[26] of the sun, and that the characteristics of the seasons are developed in excess every eighth year, at the revolution of every hundredth moon.

CHAP. 58.—THE RISING AND SETTING OF THE STARS.

The whole of this system is based upon the observation of three branches of the heavenly phænomena, the rising of the constellations, their setting, and the regular recurrence of the seasons. These risings and settings may be observed in two different ways:—The stars are either concealed, and cease to be seen at the rising of the sun, or else present themselves to our view at his setting—this last being more generally known by the name of "emersion" than of "rising," while their dis-

[23] *I. e.* Asia Minor.

[24] *I. e.* the north-west parts of Africa.

[25] See c. 39 of that Book.

[26] "Ratione solis." This theory of the succession of changes every four years, was promulgated by Eudoxus See B. ii. c. 48.

appearance is rather an "occultation" than a "setting."—Considered, again, in another point of view, when upon certain days they begin to appear or disappear, at the setting or the rising of the sun, as the case may be, these are called their morning or their evening settings or risings, according as each of these phænomena takes place at day-break or twilight. It requires an interval of three quarters of an hour at least before the rising of the sun or after his setting, for the stars to be visible to us. In addition to this, there are certain stars which rise and set twice.[27] All that we here state bears reference, it must be remembered, to the fixed stars only.

CHAP. 59.—THE EPOCHS OF THE SEASONS.

The year is divided into four periods or seasons, the recurrence of which is indicated by the increase or diminution of the daylight. Immediately after the winter solstice the days begin to increase, and by the time of the vernal equinox, or in other words, in ninety days and three hours, the day is equal in length to the night. After this, for ninety-four days and twelve hours, the days continue to increase, and the nights to diminish in proportion, up to the summer solstice; and from that point the days, though gradually decreasing, are still in excess of the nights for ninety-two days, twelve hours, until the autumnal equinox. At this period the days are of equal length with the nights, and after it they continue to decrease inversely to the nights until the winter solstice, a period of eighty-eight days and three hours. In all these calculations, it must be remembered, equinoctial[28] hours are spoken of, and not those measured arbitrarily in reference to the length of any one day in particular. All these seasons, too, commence at the eighth degree of the signs of the Zodiac. The winter solstice begins at the eighth degree of Capricorn, the eighth[29] day before the calends of January, in general;[30] the vernal equinox at the eighth degree of Aries; the summer solstice, at the eighth degree of Cancer; and the autumnal equinox at the eighth degree of Libra: and it is rarely that

[27] See c. 69, as to Arcturus and Aquila.

[28] He speaks of Equinoctial hours, these being in all cases of the same length, in contradistinction to the Temporal, or Unequal hours, which with the Romans were a twelfth part of the Natural day, from sunrise to sunset, and of course were continually varying.

[29] Twenty-fifth of December. [30] Fere.

these days do not respectively give some indication of a change in the weather.

These four seasons again, are subdivided, each of them, into two equal parts. Thus, for instance, between the summer solstice and the autumnal equinox, the setting of the Lyre,[31] on the forty-sixth day, indicates the beginning of autumn; between the autumnal equinox and the winter solstice, the morning setting of the Vergiliæ, on the forty-fourth day, denotes the beginning of winter; between the winter solstice and the vernal equinox, the prevalence of the west winds on the forty-fifth day, denotes the commencement of spring; and between the vernal equinox and the summer solstice, the morning rising of the Vergiliæ, on the forty-eighth day, announces the commencement of summer. We shall here make seed-time, or in other words, the morning setting of the Vergiliæ, our starting-point;[32] and shall not interrupt the thread of our explanation by making any mention of the minor constellations, as such a course would only augment the difficulties that already exist. It is much about this period that the stormy constellation of Orion departs, after traversing a large portion of the heavens.[33]

CHAP. 60.—THE PROPER TIME FOR WINTER SOWING.

Most persons anticipate the proper time for sowing, and begin to put in the corn immediately after the eleventh day of the autumnal equinox, at the rising of the Crown, when we may reckon, almost to a certainty, upon several days of rainy weather in succession. Xenophon[34] is of opinion, that sowing should not be commenced until the Deity has given us the signal for it, a term by which Cicero understands the rains that prevail in November. The true method to be adopted, however, is not to sow until the leaves begin to fall. Some persons are of opinion that this takes place at the setting of the

[31] In this Translation, the names of the Constellations are given in English, except in the case of the signs of the Zodiac, which are universally known by their Latin appellations.

[32] He begins in c. 64, at the winter solstice, and omits the period between the eleventh of November and the winter solstice altogether, so far as the mention of individual days.

[33] "Cum sidus vehemens Orionis iisdem diebus longo decedat spatio." This passage is apparently unintelligible, if considered, as Sillig reads it, as dependent on the preceding one.

[34] In his Œconomica.

Vergiliæ, or the third day before the ides of November, as already stated,[35] and they carefully observe it, for it is a constellation very easily remarked in the heavens, and warns us to resume our winter clothes.[36] Hence it is, that immediately on its setting, the approach of winter is expected, and care is taken by those who are on their guard against the exorbitant charges of the shop-keepers, to provide themselves with an appropriate dress. If the Vergiliæ set with cloudy weather, it forebodes a rainy winter, and the prices of cloaks[37] immediately rise; but if, on the other hand, the weather is clear at that period, a sharp winter is to be expected, and then the price of garments of other descriptions is sure to go up. But as to the husbandman, unacquainted as he is with the phænomena of the heavens, his brambles are to him in place of constellations, and if he looks at the ground he sees it covered with their leaves. This fall of the leaves, earlier in one place and later in another, is a sure criterion of the temperature of the weather; for there is a great affinity between the effects produced by the weather in this respect, and the nature of the soil and climate. There is this peculiar advantage, too, in the careful observation of these effects, that they are sure to be perceptible throughout the whole earth, while at the same time they have certain features which are peculiar to each individual locality.—A person may perhaps be surprised at this, who does not bear in mind that the herb pennyroyal,[38] which is hung up in our larders, always blossoms on the day of the winter solstice; so firmly resolved is Nature that nothing shall remain concealed from us, and in that spirit has given us the fall of the leaf as the signal for sowing.

Such is the true method of interpreting all these phænomena, granted to us by Nature as a manifestation of her will. It is in this way that she warns us to prepare the ground, makes us a promise of a manure, as it were, in the fall of the leaves, announces to us that the earth and the productions thereof are thus protected by her against the cold, and warns us to hasten the operations of agriculture.

[35] In B. ii. c. 47.
[36] "Vestis institor est." This passage is probably imperfect.
[37] "Lacernarum." [38] "Pulegium." See B. ii. c. 41.

CHAP. 61.—WHEN TO SOW THE LEGUMINOUS PLANTS AND THE POPPY.

Varro[39] has given no other sign but this[40] for our guidance in sowing the bean. Some persons are of opinion that it should be sown at full moon, the lentil between the twenty-fifth and thirtieth day of the moon, and the vetch on the same days of the moon; and they assure us that if this is done they will be exempt from the attacks of slugs. Some say, however, that if wanted for fodder, they may be sown at these periods, but if for seed, in the spring. There is another sign, more evident still, supplied us by the marvellous foresight of Nature, with reference to which we will give the words employed by Cicero[41] himself:

"The lentisk, ever green and ever bent
Beneath its fruits, affords a threefold crop:
Thrice teeming, thrice it warns us when to plough."

One of the periods here alluded to, is the same that is now under consideration, being the appropriate time also for sowing flax and the poppy.[42] With reference to this last, Cato gives the following advice: "Burn, upon land where corn has been grown, the twigs and branches which are of no use to you, and when that is done, sow the poppy there." The wild poppy, which is of an utility that is quite marvellous, is boiled in honey as a remedy for diseases in the throat,[43] while the cultivated kind is a powerful narcotic. Thus much in reference to winter sowing.

CHAP. 62.—WORK TO BE DONE IN THE COUNTRY IN EACH MONTH RESPECTIVELY.

And now, in order to complete what we may call in some measure an abridgment of the operations of agriculture, it is as well to add that it will be a good plan at the same period to manure the roots of trees, and to mould up the vines—a single hand being sufficient for one jugerum. Where, too, the nature of the locality will allow it, the vines, and the trees upon which they are trained, should be lopped, and the soil turned up with

[39] De Re Rust. i. 34.

[40] The setting of the Vergiliæ.

[41] De Divinat. B. i. c. 15. They are a translation from Aratus.

[42] De Re Rust. c. 38. Pliny has said above, that flax and the poppy should be sown in the spring.

[43] The Papaver Rhœas of Linnæus is still used for affections of the throat.

the mattock for seed plots; trenches, too, should be opened out, and the water drained from off the fields, and the presses[44] should be well washed and put away. Never put eggs beneath the hen between the calends of November[45] and the winter solstice:[46] during all the summer and up to the calends of November, you may put thirteen under the hen; but the number must be smaller in winter, not less than nine, however. Democritus is of opinion, that the winter will turn out of the same character[47] as the weather on the day of the winter solstice and the three succeeding days; the same too with the summer and the weather at the summer solstice. About the winter solstice, for about twice seven days mostly, while the halcyon[48] is sitting, the winds are lulled, and the weather serene;[49] but in this case, as in all others, the influence of the stars must only be judged of by the result, and we must not expect the changes of the weather, as if out upon their recognizances,[50] to make their appearance exactly on certain predetermined days.

CHAP. 63.—WORK TO BE DONE AT THE WINTER SOLSTICE.

Be careful never to touch the vine at the winter solstice. Hyginus recommends us to strain and even rack-off wine at the seventh day after the winter solstice, provided the moon is seven days old. About this period, also, the cherry-tree, he says, should be planted. Acorns, too, should now be put in soak for the oxen, a modius for each pair. If given in larger quantities, this food will prove injurious to their health; and whenever it is given, if they are fed with it for less than thirty days in succession, an attack of scab in the spring, it is said, will be sure to make you repent.

This, too, is the period that we have already assigned[51] for cutting timber—other kinds of work, again, may be found for the hours of the night, which are then so greatly prolonged. There are baskets, hurdles, and panniers to be woven, and wood

[44] For the grape and the olive. [45] First of November.
[46] In the more northern climates this is never done till the spring.
[47] This is merely imaginary.
[48] Or king-fisher. It was a general belief that this bird incubated on the surface of the ocean.
[49] Hence the expression, "Halcyon days."
[50] Vadimonia. [51] In B. xvi. c. 74.

to be cut for torches: squared stays[52] for the vine may be prepared, too, thirty in the day time, and if rounded,[53] as many as sixty. In the long hours of the evening, too, some five squared stays, or ten rounded ones may be got ready, and the same number while the day is breaking.

CHAP. 64.—WORK TO BE DONE BETWEEN THE WINTER SOLSTICE AND THE PREVALENCE OF THE WEST WINDS.

Between the winter solstice and the period when the west winds begin to prevail, the following, according to Cæsar, are the more important signs afforded by the constellations: the Dog sets in the morning, upon the third[54] day before the calends of January; a day on the evening of which the Eagle sets to the people of Attica and the adjoining countries. On the day before[55] the nones of January, according to Cæsar's computation, the Dolphin rises in the morning, and on the next day, the Lyre, upon the evening of which the Arrow sets to the people of Egypt. Upon the sixth[56] day before the ides of January, the Dolphin sets in the evening, and Italy has many days of continuous cold; the same is the case also when the sun enters Aquarius, about the sixteenth[57] day before the calends of February. On the eighth[58] before the calends of February, the star which Tubero calls the Royal Star[59] sets in the morning in the breast of Leo, and in the evening of the day before[60] the nones of February, the Lyre sets.

During the latter days of this period, whenever the nature of the weather will allow of it, the ground should be turned up with a double mattock, for planting the rose and the vine —sixty men to a jugerum. Ditches, too, should be cleaned out, or new ones made; and the time of day-break may be usefully employed in sharpening iron tools, fitting on handles, repairing such dolia[61] as may have been broken, and rubbing up and cleaning their staves.

[52] "Ridicas." [53] "Palos."

[54] Thirtieth of December. According to the Roman reckoning, the *third* day would be the day but one before.

[55] Fourth of January. [56] Eighth of January.

[57] Seventeenth of January. [58] Twenty-fifth of January.

[59] "Regia Stella." [60] Fourth of February.

[61] Or wine-vats; by the use of the word "laminas," he seems to be speaking not of the ordinary earthen dolia, but the wooden ones used in Gaul and the north of Italy.

CHAP. 65.—WORK TO BE DONE BETWEEN THE PREVALENCE OF THE WEST WINDS AND THE VERNAL EQUINOX.

Between the prevalence of the west winds and the vernal equinox, the fourteenth day before[62] the calends of March, according to Cæsar, announces three days of changeable weather; the same is the case, too, with the eighth[63] before the calends of March, at the first appearance of the swallow, Arcturus rising on the evening of the next day. Cæsar has observed, that the same takes place on the third[64] before the nones of March, at the rising of Cancer; and most authorities say the same with reference to the emersion of the Vintager.[65] On the eighth[66] before the ides of March, the northern limb of Pisces[67] rises, and on the next day Orion, at which period also, in Attica, the Kite is first seen. Cæsar has noted, too, the setting of Scorpio on the ides of March,[68] a day that was so fatal to him; and on the fifteenth[69] before the calends of April, the Kite appears in Italy. On the twelfth[70] before the calends of April, the Horse sets in the morning.

This interval of time is a period of extreme activity for the agriculturist, and affords him a great number of occupations, in reference to which, however, he is extremely liable to be deceived. He is summoned to the commencement of these labours, not upon the day on which the west winds ought to begin, but upon the day on which they really do begin, to blow. This moment then must be looked for with the most careful attention, as it is a signal which the Deity has vouchsafed us in this month, attended with no doubts or equivocations, if only looked for with scrupulous care. We have already stated in the Second Book,[71] the quarter in which this wind blows, and the exact point from which it comes, and before long we shall have occasion to speak of it again still more in detail.

In the mean time, however, setting out from the day, what-

[62] Sixteenth of February. [63] Twenty-second of February.

[64] Fifth of March.

[65] On the fifth of March, Ovid says, Fasti, iii. l. 407. Columella makes it rise on the sixth of the nones, or the second of March.

[66] Eighth of March.

[67] Or, more literally, the "Northern Fish."

[68] Fifteenth of March, the day on which he was assassinated, in accordance, it is said, with the prophecy of a diviner, who had warned him to beware of the ides of March.

[69] Eighteenth of March. [70] Twenty-first of March.

[71] In c. 46 and c. 47.

ever it may happen to be, on which the west winds begin to prevail (for it is not always on the seventh before the ides of February [72] that they do begin), whether, in fact, they begin to blow before the usual time, as is the case with an early spring, or whether after, which generally happens when the winter is prolonged—there are subjects innumerable to engage the attention of the agriculturist, and those, of course, should be the first attended to, which will admit of no delay. Three month wheat must now be sown, the vine pruned in the way we have already [73] described, the olive carefully attended to, fruit-trees put in and grafted, vineyards cleaned and hoed, seedlings laid out, and replaced in the nursery by others, the reed, the willow, and the broom planted and lopped, and the elm, the poplar, and the plane planted in manner already mentioned. At this period, also, the crops of corn ought to be weeded,[74] and the winter kinds, spelt more particularly, well hoed. In doing this, there is a certain rule to be observed, the proper moment being when four blades have made their appearance, and with the bean this should never be done until three leaves have appeared above ground; even then, however, it is a better plan to clean them only with a slight hoeing, in preference to digging up the ground—but in no case should they ever be touched the first fifteen days of their blossom. Barley must never be hoed except when it is quite dry: take care, too, to have all the pruning done by the vernal equinox. Four men will be sufficient for pruning a jugerum of vineyard, and each hand will be able to train fifteen vines to their trees.[75]

At this period, too, attention should be paid to the gardens and rose-beds, subjects which will be separately treated of in succeeding Books; due care should be given to ornamental gardening as well. It is now, too, the very best time for making ditches. The ground should now be opened for future purposes, as we find recommended by Virgil[76] in particular, in order that the sun may thoroughly warm the clods. It is a piece of even more sound advice, which recommends us to plough no lands in the middle of spring but those of middling quality; for if this is done with a rich soil, weeds will be sure to spring up in the furrows immediately; and if, on the

[72] Seventh of February.
[73] In B. xvii. c. 35.
[74] Fée approves of this method of weeding before the corn is in ear.
[75] In a day, probably.
[76] Georg. i. 63.

other hand, it is a thin, meagre land, as soon as the heat comes on, it will be dried up, and so lose all the moisture which should be reserved to nourish the seed when sown. It is a much better plan, beyond a doubt, to plough such soils as these in autumn.

Cato[77] lays down the following rules for the operations of spring. "Ditches," he says, "should be dug in the seed-plots, vines should be grafted, and the elm, the fig, the olive, and other fruit-trees planted in dense and humid soils. Such meadows[78] as are not irrigated, must be manured in a dry moon, protected from the western blasts, and carefully cleaned; noxious weeds must be rooted up, fig-trees cleared, new seed-plots made, and the old ones dressed: all this should be done before you begin to hoe the vineyard. When the pear is in blossom, too, you should begin to plough, where it is a meagre, gravelly soil. When you have done all this, you may plough the more heavy, watery soils, doing this the last of all."

The proper time for ploughing, then,[79] is denoted by these two signs, the earliest fruit of the lentisk[80] making its appearance, and the blossoming of the pear. There is a third sign, however, as well, the flowering of the squill among the bulbous,[81] and of the narcissus among the garland, plants. For both the squill and the narcissus, as well as the lentisk, flower three times, denoting by their first flowering the first period for ploughing, by the second flowering the second, and by the third flowering the last; in this way it is that one thing affords hints for another. There is one precaution, too, that is by no means the least important among them all, not to let ivy touch the bean while in blossom; for at this period the ivy is noxious[82] to it, and most baneful in its effects. Some plants, again, afford certain signs which bear reference more particularly to themselves, the fig for instance; when a few leaves only are found shooting from the summit, like a cup in shape, then it is more particularly that the fig-tree should be planted.

CHAP. 66.—WORK TO BE DONE AFTER THE VERNAL EQUINOX.

The vernal equinox appears to end on the eighth[83] day be-

[77] De Re Rust. 40. [78] See B. xvii. c. 8.
[79] Alluding to his quotation from Cicero in c. 61.
[80] Or mastich. [81] See c. 7 of this Book.
[82] It is not known whence he derived this unfounded notion.
[83] Twenty-fifth of March.

fore the calends of April. Between the equinox and the morning rising of the Vergiliæ, the calends [84] of April announce, according to Cæsar, [stormy weather].[85] Upon the third [86] before the nones of April, the Vergiliæ set in the evening in Attica, and the day after in Bœotia, but according to Cæsar and the Chaldæans, upon the nones.[87] In Egypt, at this time, Orion and his Sword begin to set. According to Cæsar, the setting of Libra on the sixth before [88] the ides of April announces rain. On the fourteenth before [89] the calends of May, the Suculæ set to the people of Egypt in the evening, a stormy constellation, and significant of tempests both by land and sea. This constellation sets on the sixteenth [90] in Attica, and on the fifteenth, according to Cæsar, announcing four days of bad weather in succession: in Assyria it sets upon the twelfth [91] before the calends of May. This constellation has ordinarily the name of Parilicium, from the circumstance that the eleventh [92] before the calends of May is observed as the natal day of the City of Rome; upon this day, too, fine weather generally returns, and gives us a clear sky for our observations. The Greeks call the Suculæ by the name of "Hyades,"[93] in consequence of the rain and clouds which they bring with them; while our people, misled by the resemblance of the Greek name to another word [94] of theirs, meaning a "pig," have imagined that the constellation receives its name from that word, and have consequently given it, in their ignorance, the name of "Suculæ," or the "Little Pigs."

In the calculations made by Cæsar, the eighth [95] before the calends of May is a day remarked, and on the seventh [96] before the calends, the constellation of the Kids rises in Egypt. On the sixth before [97] the calends, the Dog sets in the evening in Bœotia and Attica, and the Lyre rises in the morning. On the fifth [98] before the calends of May, Orion has wholly set

[84] First of April.
[85] This passage is omitted in the original, but was probably left out by inadvertence.
[86] Third of April.
[87] Fifth of April.
[88] Eighth of April.
[89] Eighteenth of April.
[90] Sixteenth of April.
[91] Twentieth of April.
[92] Twenty-first of April. See B. xix. c. 24.
[93] From ὕειν, to rain.
[94] "Sus," a pig.
[95] Twenty-fourth of April.
[96] Twenty-fifth of April.
[97] Twenty-sixth of April.
[98] Twenty-seventh of April.

to the people of Assyria, and on the fourth [99] before the calends the Dog. On the sixth before [1] the nones of May, the Suculæ rise in the morning, according to the calculation of Cæsar, and on the eighth before [2] the ides, the She-goat, which announces rain. In Egypt the Dog sets in the evening of the same day. Such are pretty nearly the movements of the constellations up to the sixth before [3] the ides of May, the period of the rising of the Vergiliæ.

In this interval of time, during the first fifteen days, the agriculturist must make haste and do all the work for which he has not been able to find time before the vernal equinox; and he should bear in mind that those who are late in pruning their vines are exposed to jibes and taunts, in imitation of the note of the bird of passage known to us as the cuckoo.[4] For it is looked upon as a disgrace, and one that subjects him to well-merited censure, for that bird, upon its arrival, to find him only then pruning his vines. Hence it is, too, that we find those cutting jokes,[5] of which our peasantry are the object, at the beginning of spring. Still, however, all such jokes are to be looked upon as most abominable, from the ill omens [6] they convey.

In this way, then, we see that, in agricultural operations, the most trifling things are construed as so many hints supplied us by Nature. The latter part of this period is the proper time for sowing panic and millet; the precise moment, however, is just after the barley has ripened. In the case of the very same land, too, there is one sign that points in common both to the ripening of the barley and the sowing of panic and millet—the appearance of the glow-worm, shining in the fields at night. "Cicindelæ" [7] is the name given by the country people to these flying stars, while the Greeks call them "lampyrides,"—another manifestation of the incredible bounteousness of Nature.

CHAP. 67. (27.)—WORK TO BE DONE AFTER THE RISING OF THE VERGILIÆ: HAY-MAKING.

Nature had already formed the Vergiliæ, a noble group of

[99] Twenty-eighth of April.
[1] Second of May.
[2] Eighth of May.
[3] Tenth of May.
[4] "Cuculus." See B. x. c. 11.
[5] "Petulantiæ vales." Perhaps "indecent," or "wanton jokes:" at least, Hardouin thinks so.
[6] By causing quarrels, probably.
[7] See B. xi. c. 34.

stars, in the heavens; but not content with these, she has made others as well for the face of the earth, crying aloud, as it were:[7*] "Why contemplate the heavens, husbandman? Why, rustic, look up at the stars? Do not the nights already afford you a sleep too brief for your fatigues? Behold now! I scatter stars amid the grass for your service, and I reveal them to you in the evening, as you return from your work; and that you may not disregard them, I call your attention to this marvel. Do you not see how the wings of this insect cover a body bright and shining like fire, and how that body gives out light in the hours of the night even? I have given you plants to point out to you the hours, and, that you may not have to turn your eyes from the earth, even to view the sun, the heliotropium and the lupine have been made by me to move with his movements. Why then still look upwards, and scan the face of heaven? Behold, here before your very feet are your Vergiliæ; upon a certain day do they make their appearance, and for a certain time do they stay. Equally certain, too, it is that of that constellation they are the offspring. Whoever, then, shall put in his summer seeds before they have made their appearance, will infallibly find himself in the wrong."

It is in this interval, too, that the little bee comes forth, and announces that the bean is about to blossom; for it is the bean in flower that summons it forth. We will here give another sign, which tells us when the cold is gone; as soon as ever you see the mulberry[8] in bud, you have no occasion to fear any injury from the rigour of the weather.

It is the time, now, to put in cuttings of the olive, to clear away between the olive-trees, and, in the earlier days of the equinox, to irrigate the meadows. As soon, however, as the grass puts forth a stem, you must shut off the water from the fields.[9] You must now lop the leafy branches of the vine, it being the rule that this should be done as soon as the branches have attained four fingers in length; one labourer will be sufficient for a jugerum. The crops of corn, too, should be hoed over again, an operation which lasts twenty days. It is generally thought, however, that it is injurious to both vine and corn to begin hoeing directly after the equinox. This is the proper time, too, for washing sheep.

7* A quotation from some unknown poet, Sillig thinks.

8 See B. xvi. c. 41.

9 See Virgil, Ecl. iii. l. 111.

After the rising of the Vergiliæ the more remarkable signs are, according to Cæsar, the morning rising of Arcturus, which takes place on the following day;[10] and the rising of the Lyre on the third[11] before the ides of May. The She-goat sets in the evening of the twelfth before[12] the calends of June, and in Attica the Dog. On the eleventh[13] before the calends of June, according to Cæsar, Orion's Sword begins to appear; and, according to the same writer, on the fourth[14] before the nones of June the Eagle rises in the evening, and in Assyria as well. On the seventh[15] before the ides of June Arcturus sets in the morning to the people of Italy, and on the fourth[16] before the ides the Dolphin rises in the evening. On the seventeenth[17] before the calends of July Orion's Sword rises in Italy, and, four days later, in Egypt. On the eleventh[18] before the calends of July, according to Cæsar's reckoning, Orion's Sword begins to set; and the eighth[19] before the calends of July, the longest day in the year, with the shortest night, brings us to the summer solstice.

In this interval of time the vine should be cleared of its superfluous branches, and care taken to give an old vine one turning up at the roots, a young tree two. Sheep, too, are sheared at this period, lupines turned up for manuring the land, the ground dug, vetches cut for fodder, and beans gathered in and threshed.

(28.) About the calends of June[20] the meadows are mown; the cultivation of which, the one which is the easiest of all, and requires the smallest outlay, leads me to enter into some further details relative to it. Meadow lands should be selected in a rich, or else a moist or well-watered, soil, and care should be taken to drain the rain-water upon them from the high-road. The best method of ensuring a good crop of grass, is first to plough the land, and then to harrow it: but, before passing the harrow over it, the ground should be sprinkled with such seed as may have fallen from the hay in the hay-lofts and mangers. The land should not be watered, however, the first year,[21] nor should cattle be put to graze upon it before

10 Eleventh of May.
11 Thirteenth of May.
12 Twenty-first of May.
13 Twenty-second of May.
14 Second of June.
15 Seventh of June.
16 Tenth of June.
17 Fifteenth of June.
18 Twenty-first of June.
19 Twenty-fourth of June.
20 First of June.
21 Columella, B. ii. c. 18.

the second hay-harvest, for fear lest the blade should be torn up by the roots, or be trodden down and stunted in its growth. Meadow land will grow old in time, and it requires to be renovated every now and then, by sowing upon it a crop of beans, or else rape or millet, after which it should be sown the next year with corn, and then left for hay the third. Care, too, should be taken, every time the grass is cut, to pass the sickle over the ground, and so cut the aftermath which the mowers have left behind; for it is a very bad plan to leave any of the grass and let it shed its seed there. The best crop for meadow land is trefoil,[22] and the next best is grass;[23] nummulus[24] is the very worst of all, as it bears a pod which is particularly injurious; equisætis,[25] too, which derives its name from its resemblance to horse-hair, is of a noxious character. The proper time for mowing grass is when the ear begins to shed its blossom and to grow strong: care must be taken to cut it before it becomes dry and parched. "Don't mow your hay too late," says Cato;[26] "but cut it before the seed is ripe." Some persons turn the water upon it the day before mowing, where it is practicable to do so. It is the best plan to cut hay in the night while the dews are falling.[27] In some parts of Italy the mowing is not done till after harvest.

This operation, too, was a very expensive one in ancient times. In those days the only whetstones[28] known were those of Crete and other places beyond sea, and they only used oil to sharpen the scythe with. For this purpose the mower moved along, with a horn, to hold the oil, fastened to his thigh. Italy has since furnished us with whetstones which are used with water, and give an edge to the iron quite equal to that imparted by the file; these water-whetstones, however, turn green very quickly. Of the scythe[29] there are two va-

[22] The varieties now known as Trifolium pratense, Trifolium rubens and Trifolium repens.

[23] "Gramen." Under this head, as Fée says, he probably includes the gramineous plants, known as Alopecurus, Phleum, Poa, Festuca, &c.

[24] Probably the Lysimachia nummularia of Linnæus, which has a tendency to corrode the lips of the sheep that pasture on it.

[25] Known to us as "horse-tail;" varieties of which are the Equisetum fluviatile and the Equisetum palustre of Linnæus.

[26] De Re Rust. c. 53. [27] See Virgil's Georg. i. 289.

[28] As to whetstones, for further information, see B. xxvi. c. 47.

[29] The word "falx," "sickle" or "scythe," is used here as denoting an implement for mowing, and not reaping.

rieties; the Italian,[30] which is considerably shorter than the other, and can be handled among underwood even; and the Gallic, which makes quicker work[31] of it, when employed on extensive domains, for there they cut the grass in the middle only, and pass over the shorter blades. The Italian mowers cut with one hand only. It is a fair day's work for one man to cut a jugerum of grass, and for another to bind twelve hundred sheaves of four pounds each. When the grass is cut it should be turned towards the sun, and must never be stacked until it is quite dry. If this last precaution is not carefully taken, a kind of vapour will be seen arising from the rick in the morning, and as soon as the sun is up it will ignite to a certainty, and so be consumed. When the grass has been cut, the meadow must be irrigated again, for the purpose of ensuring a crop in the autumn, known to us as the "cordum," or aftermath. At Interamna in Umbria the grass is cut four times[32] a-year, and this although the meadows there are not irrigated,—in most places, three. After all this has been done, too, the pasturage of the land is found no less lucrative than the hay it has produced. This, however, is a matter of consideration for those more particularly who rear large herds of cattle, and every one whose occupation it is to breed beasts of burden, will have his own opinions upon the subject: it is found, however, the most lucrative of all by those whose business it is to train chariot-horses.

CHAP. 68.—THE SUMMER SOLSTICE.

We have already stated[33] that the summer solstice arrives at the eighth degree of Cancer, and upon the eighth day before[34] the calends of July: this is an important crisis in the year, and of great interest to the whole earth. Up to this period from the time of the winter solstice the days have gone on increasing, and the sun has continued for six months making his ascension towards the north; having now surmounted the heights of the heavens, at this point he reaches the goal, and

[30] Similar in shape to our sickle, or reaping hook, no doubt.

[31] "Majoris compendii." Similar to our reaping-hook, also. Fée thinks that the former was similar to the "faux faucille," or false sickle, the latter to the common sickle of the French.

[32] Fée says that this is the case in some parts of France.

[33] In c. 59 of this Book.

[34] Twenty-fourth of June. See the last Chapter.

after doing so, commences his return towards the south; the consequence of which is, that for the next six months he increases the nights and subtracts from the length of the days. From this period, then, it is the proper time to gather in and store away the various crops in succession, and so make all due preparations for the rigour and severity of the winter.

It was only to be expected that Nature should point out to us the moment of this change by certain signs of an indubitable character; and she has accordingly placed them beneath the very hands of the agriculturist, bidding the leaves turn round[35] upon that day, and so denote that the luminary has now run its course. And it is not the leaves of trees only that are wild and far remote that do this, nor have those persons who are on the look-out for these signs to go into devious forests and mountain tracts to seek them. Nor yet, on the other hand, are they to be seen in the leaves of trees only that are grown in the vicinity of cities or reared by the hand of the ornamental gardener, although in them they are to be seen as well. Nature upon this occasion turns the leaf of the olive which meets us at every step; she turns the leaf of the linden, sought by us, as it is, for a thousand purposes; she turns the leaf of the white poplar, too, wedded to the vine that grows upon its trunk. And still, for her, all this is not enough. "You have the elm," she says, "reared for the support of the vine, and the leaf of that I will make to turn as well. The leaves of this tree you have to gather for fodder, the leaves of the vine you prune away. Only look upon them, and there you behold the solstice;[36] they are now pointing towards a quarter of the heavens the reverse of that towards which they looked the day before. The twigs of the withy, that most lowly of trees, you employ for tying things without number. You are a head taller than it—I will make its leaves to turn round as well. Why complain, then, that you are but a rustic peasant? It shall be no fault of mine if you do not understand the heavens and become acquainted with the movements of the celestial bodies. I will give another sign, too, that shall address itself to your ear—only listen for the cooing of the ring-doves; and beware of sup-

[35] On this subject see B. xvi. c. 36. See also Varro, De Re Rust. B. i. c. 46, and Aulus Gellius, B. ix. c. 7.

[36] "Tenes Sidus."

posing that the summer solstice is past, until you see the wood-pigeon sitting on her eggs."

Between the summer solstice and the setting of the Lyre, on the sixth day before the calends of July,[37] according to Cæsar's reckoning, Orion rises, and upon the fourth[38] before the nones of July, his Belt rises to the people of Assyria. Upon the morning of the same day, also, the scorching constellation of Procyon rises. This last constellation has no name with the Romans, unless, indeed, we would consider it as identical with Canicula,[39] or Lesser Dog, which we find depicted among the stars; this last is productive of excessive heat, as we shall shortly have further occasion to state. On the fourth[40] before the nones of July, the Crown sets in the morning to the people of Chaldæa, and in Attica, the whole of Orion has risen by that day. On the day before[41] the ides of July, the rising of Orion ends to the Egyptians also; on the sixteenth[42] before the calends of August, Procyon rises to the people of Assyria, and, the day but one after, of nearly all other countries as well, indicating a crisis that is universally known among all nations, and which by us is called the rising of the Dog-star; the sun at this period entering the first degree of Leo. The Dog-star rises on the twenty-third day after the summer solstice; the influence of it is felt by both ocean, and earth, and even by many of the animals as well, as stated by us elsewhere on the appropriate occasions.[43] No less veneration, in fact, is paid to this star, than to those that are consecrated to certain gods; it kindles the flames of the sun, and is one great source of the heats of summer.

On the thirteenth[44] day before the calends of August, the Eagle sets in the morning to the people of Egypt, and the breezes that are the precursors of the Etesian winds, begin to blow; these, according to Cæsar, are first perceived in Italy, on the tenth before[45] the calends of August. The Eagle sets in the morning of that day to the people of Attica, and on the

[37] Twenty-sixth of June.
[38] Fourth of July.
[39] There is some confusion, apparently, here. Canicula, Syrius, or the Dog-star, belongs to the Constellation Canis Major; while Canis Minor, a Constellation which contains the star Procyon, ("the forerunner of the Dog,") precedes it.
[40] Fourth of July.
[41] Fourteenth of July.
[42] Seventeenth of July.
[43] B. ii. c. 40, and B. xix. c. 25.
[44] Twentieth of July.
[45] Twenty-third of July.

third before[46] the calends of August, the Royal Star in the breast of Leo rises in the morning, according to Cæsar. On the eighth before[47] the ides of August, one half of Arcturus has ceased to be visible, and on the third before[48] the ides the Lyre, by its setting, opens the autumn,—according to Cæsar at least; though a more exact calculation has since shown, that this takes place on the sixth day before[49] the ides of that month.

The time that intervenes between these periods is one that is of primary importance in the cultivation of the vine; as the constellation of which we have spoken, under the name of Canicula, has now to decide upon the fate of the grape. It is at this period that the grapes are said to be charred,[50] a blight falling upon them which burns them away, as though red-hot coals had been applied to them. There is no hail that can be compared with this destructive malady, nor yet any of those tempests, which have been productive of such scarcity and dearth. For the evil effects of these, at the very utmost, are only felt in isolated districts, while the coal blight,[51] on the other hand, extends over whole countries, far and wide. Still, however, the remedy would not be very difficult, were it not that men would much rather calumniate Nature, than help themselves. It is said that Democritus,[52] who was the first to comprehend and demonstrate that close affinity which exists between the heavens and the earth, finding his laborious researches upon that subject slighted by the more opulent of his fellow-citizens, and presaging the high price of oil, which was about to result upon the rising of the Vergiliæ, (as we have already mentioned,[53] and shall have to explain more fully hereafter), bought up all the oil in the country, which was then at a very low figure, from the universal expectation of a fine crop of olives; a proceeding which greatly surprised all who knew that a life of poverty and learned repose was so entirely the object of his aspirations. When, however, his motives had been fully justified by the result, and vast riches had flowed in upon him apace, he returned all his profits to the disappointed

[46] Thirtieth of July.
[47] Sixth of August.
[48] Eleventh of August.
[49] Eighth of August.
[50] See B. xvii. c. 37.
[51] Carbunculus.
[52] Cicero, De Div., B. ii. 201, Aristotle, Polit. B. i. c. 7, and Diogenes Laertius tell this story of Thales the philosopher; Pliny being the only one that applies it to Democritus.
[53] In the last Chapter. This passage is corrupt.

proprietors, whose avarice had now taught them to repent, thinking it quite sufficient to have thus proved how easy it was for him to acquire riches whenever he pleased. At a more recent period, again, Sextius,[54] a Roman philosopher residing at Athens, made a similar application of his knowledge. Such, then, is the utility of science, the instruction provided by which it shall be my aim, as clearly and as perspicuously as possible, to apply to the various occupations of a country life.

Most writers have said that it is the dew, scorched by a burning sun, that is the cause of mildew[55] in corn, and of coal-blight in the vine; this, however, seems to me in a great measure incorrect, and it is my opinion that all blights result entirely from cold, and that the sun is productive of no injurious effects whatever. This, in fact, will be quite evident, if only a little attention is paid to the subject; for we find that the blight makes its appearance at first in the night time only, and before the sun has shone with any vigour. The natural inference is, that it depends entirely upon the moon, and more particularly as such a calamity as this is never known to happen except at the moon's conjunction, or else at the full moon, periods at which the influence of that heavenly body is at its greatest height. For at both of these periods, as already[56] stated by us more than once, the moon is in reality at the full; though during her conjunction she throws back to the heavens all the light which she has received from the sun. The difference in the effects produced by the moon at these two periods is very great, though at the same time equally apparent; for at the conjunction, that body is extremely hot in summer, but cold in winter; while, on the other hand, at the full moon, the nights are cold in summer, but warm in winter. The reason of this, although Fabianus and the Greek writers adopt another method of explaining it, is quite evident. During the moon's conjunction in summer, she must of necessity move along with the sun in an orbit nearer to the earth, and so become warmed

[54] Mentioned by Seneca, Ep. 59.

[55] It was reserved for the latter part of the last century to discover that mildew operated on vegetation through the medium of minute, parasitical fungi. It is mostly attributed to defects in the light or the atmosphere, or else humidity in excess. See c. 44 of this Book.

[56] In B. ii. c. 6, for instance.

by the heat which she receives by reason of her closer vicinity to the sun. In winter, again, at the time of the conjunction, she is farther off from us, the sun being also removed to a greater distance. On the other hand, again, when the moon is at the full in summer, she is more remote from the earth, and in opposition with the sun; while, in winter, she approaches nearer to us at that period, by adopting the same orbit as at her conjunction in summer. Naturally humid herself, as often as from her position she is cold, she congeals to an unlimited extent the dews which fall at that period of the year.

CHAP. 69.—CAUSES OF STERILITY.

But we ought always to bear in mind, more particularly, that there are two varieties of evils that are inflicted upon the earth by the heavens. The first of these, known by us under the name of "tempests," comprehends hail-storms, hurricanes and other calamities of a similar nature; when these take place at the full moon, they come upon us with additional intensity. These tempests take their rise in certain noxious constellations, as already stated by us on several occasions, Arcturus, for instance, Orion, and the Kids.

The other evils that are thus inflicted upon us, supervene with a bright, clear sky, and amid the silence of the night, no one being sensible of them until we have perceived their effects. These dispensations are universal and of a totally different character from those previously mentioned, and have various names given to them, sometimes mildew, sometimes blast, and sometimes coal blight; but in all cases sterility is the infallible result. It is of these last that we have now to speak, entering into details which have not hitherto been treated of by any writer; and first of all we will explain the causes of them.

(29.) Independently of the moon, there are two principal causes of these calamities, which emanate more particularly from two quarters of the heavens of but limited extent. On the one hand, the Vergiliæ exercise an especial influence on our harvests, as it is with their rising that the summer begins, and with their setting, the winter; thus embracing, in the space of six months, the harvest, the vintage, and the ripening of all the vegetable productions. In addition to this, there is a circular tract in the heavens, quite visible to the human eye even, known

as the Milky Way. It is the emanations from this, flowing as it were from the breast, that supply their milky[57] nutriment to all branches of the vegetable world. Two constellations more particularly mark this circular tract, the Eagle in the north, and Canicula in the south; of this last, we have already made mention[58] in its appropriate place. This circle traverses also Sagittarius and Gemini, and passing through the centre of the sun, cuts the equinoctial line below, the constellation of the Eagle making its appearance at the point of intersection on the one side, and Canicula on the other. Hence it is that the influences of both these constellations develope themselves upon all cultivated lands; it being at these points only that the centre of the sun is brought to correspond with that of the earth. If, then, at the moments of the rising and the setting of these constellations, the air, soft and pure, transmits these genial and milky emanations to the earth, the crops will thrive and ripen apace; but if, on the other hand, the moon, as already[59] mentioned, sheds her chilling dews, the bitterness thereof infuses itself into these milky secretions, and so kills the vegetation in its birth. The measure of the injury so inflicted on the earth depends, in each climate, upon the combination of the one or other of these causes; and hence it is that it is not felt in equal intensity throughout the whole earth, nor even precisely at the same moment of time. We have already[60] said that the Eagle rises in Italy on the thirteenth day[61] before the calends of January, and the ordinary course of Nature does not permit us before that period to reckon with any degree of certainty upon the fruits of the earth; for if the moon should happen to be in conjunction at that time, it will be a necessary consequence, that all the winter fruits, as well as the early ones, will receive injury more or less.

The life led by the ancients was rude and illiterate; still, as will be readily seen, the observations they made were not less remarkable for ingenuity than are the theories of the present day. With them there were three set periods for gathering in the produce of the earth, and it was in honour of these periods that they instituted the festive days, known as the

[57] An onomatic prejudice, as Fée says, solely founded on the peculiarity of the name.

[58] In the preceding Chapter.

[59] In the preceding Chapter.

[60] In B. xvi. c. 42.

[61] Twentieth of December.

Robigalia,[62] the Floralia, and the Vinalia. The Robigalia were established by Numa in the fortieth year of his reign, and are still celebrated on the seventh day before the calends of May, as it is at this period that mildew[63] mostly makes its first attacks upon the growing corn. Varro fixes this crisis at the moment at which the sun enters the tenth degree of Taurus, in accordance with the notions that prevailed in his day: but the real cause is the fact, that thirty-one[64] days after the vernal equinox, according to the observations of various nations, the Dog-star sets between the seventh and fourth before the calends of May, a constellation baneful in itself, and to appease which a young dog should first be sacrificed.[65] The same people also, in the year of the City 513, instituted the Floralia, a festival held upon the fourth before[66] the calends of May, in accordance with the oracular injunctions of the Sibyl, to secure a favourable season for the blossoms and flowers. Varro fixes this day as the time at which the sun enters the fourteenth degree of Taurus. If there should happen to be a full moon during the four days at this period, injury to the corn and all the plants that are in blossom, will be the necessary result. The First Vinalia, which in ancient times were established on the ninth before[67] the calends of May, for the purpose of tasting[68] the wines, have no signification whatever in reference to the fruits of the earth, any more than the festivals already mentioned have in reference to the vine and the olive; the germination of these last not commencing, in fact, till the rising of the Vergiliæ, on the Sixth day before[69] the ides of

[62] Or festival in honour of Robigo, the Goddess of mildew, on the twenty-fifth of April. See Ovid's Fasti, B. iv. l. 907, *et seq.*

[64] Robigo.

[63] "Nineteen" is the proper number.

[65] "Et cui præoccidere caniculam necesse est." The real meaning of this passage would seem to be,—"Before which, as a matter of course, Canicula must set." But if so, Pliny is in error, for Canicula, or Procyon, sets heliacally *after* the Dog-star, though it rises before it. Hardouin observes, that it is abundantly proved from the ancient writers that it was the custom to sacrifice a puppy to Sirius, or the Dog-star, at the Robigalia. As Littré justly remarks, it would almost appear that Pliny intended, by his ambiguous language, to lead his readers into error.

[66] Twenty-eighth of April. The festival of Flora.

[67] Twenty-third of April. This was the first, or Urban Vinalia: the second, or Rustic Vinalia, were held on the nineteenth of August.

[68] The same as the Greek Πιθόιγια, or "opening of the Casks."

[69] Tenth of May.

May, as already mentioned on previous occasions.[70] This, again, is another period of four days, which should never be blemished by dews, as the chilling constellation of Arcturus, which sets on the following day, will be sure to nip the vegetation; still less ought there to be a full moon at this period.

On the fourth before[71] the nones of June, the Eagle rises again in the evening, a critical day for the olives and vines in blossom, if there should happen to be a full moon. For my part, I am of opinion that the eighth[72] before the calends of July, the day of the summer solstice, must be a critical day, for a similar reason; and that the rising of the Dog-star, twenty-three days after the summer solstice, must be so too, in case the moon is then in conjunction; for the excessive heat is productive of injurious effects, and the grape becomes prematurely ripened, shrivelled, and tough. Again, if there is a full moon on the fourth before[73] the nones of July, when Canicula rises to the people of Egypt, or at least on the sixteenth before[74] the calends of August, when it rises in Italy, it is productive of injurious results. The same is the case, too, from the thirteenth day before[75] the calends of August, when the Eagle sets, to the tenth before[76] the calends of that month. The Second Vinalia, which are celebrated on the fourteenth[77] before the calends of September, bear no reference to these influences. Varro fixes them at the period at which the Lyre begins its morning setting, and says that this indicates the beginning of autumn, the day having been set apart for the purpose of propitiating the weather: at the present day, however, it is observed that the Lyre sets on the sixth before[78] the ides of August.

Within these periods there are exerted the sterilizing influences of the heavens, though I am far from denying that they may be considerably modified by the nature of the locality, according as it is cold or hot. Still, however, it is sufficient for me to have demonstrated the theory; the modifications of its results depending, in a great degree, upon attentive observation. It is beyond all question too, that either one of these two causes

[70] In B. xvi. c. 42, and in c. 66 of this Book.
[71] Second of June.
[72] Twenty-fourth of June.
[73] Fourth of July.
[74] Seventeenth of July.
[75] Twentieth of July.
[76] Twenty-third of July.
[77] Nineteenth of August.
[78] Eighth of August.

will be always productive of its own peculiar effects, the full moon, I mean, or else the moon's conjunction. And here it suggests itself how greatly we ought to admire the bounteous provisions made for us by Nature; for, in the first place, these calamitous results cannot by any possibility befall us every year, in consequence of the fixed revolutions of the stars; nor indeed, when they do happen, beyond a few nights in the year, and it may be easily known beforehand which nights those are likely to be. In order, too, that we might not have to apprehend these injuries to vegetation in all the months, Nature has so ordained that the times of the moon's conjunction in summer, and of the full moon in winter, with the exception of two days only at those respective periods, are well ascertained, and that there is no danger to be apprehended on any but the nights of summer, and those nights the shortest of all; in the day-time, on the other hand, there is nothing to fear. And then, besides, these phænomena may be so easily understood, that the ant even, that most diminutive of insects, takes its rest during the moon's conjunction, but toils on, and that during the night as well, when the moon is at the full; the bird, too, called the "parra"[79] disappears upon the day on which Sirius rises, and never reappears until that star has set; while the witwall,[80] on the other hand, makes its appearance on the day of the summer solstice. The moon, however, is productive of no noxious effects at either of these periods, except when the nights are clear, and every movement of the air is lulled; for so long as clouds prevail, or the wind is blowing, the night dews never fall. And then, besides, there are certain remedies to counteract these noxious influences.

CHAP. 70.—REMEDIES AGAINST THESE NOXIOUS INFLUENCES.

When you have reason to fear these influences, make bonfires in the fields and vineyards of cuttings or heaps of chaff, or else of the weeds that have been rooted up; the smoke[81] will act as a good preservative. The smoke, too, of burning chaff will be an effectual protection against the effects of fogs, when likely to be injurious. Some persons recommend that three

[79] See B. x. c. 45, and c. 50. The popinjay, lapwing, and tit-mouse have been suggested.

[80] Virio. See B. x. c. 45.

[81] Columella, De Arborib. c. 13, gives similar advice.

crabs should be burnt[82] alive among the trees on which the vines are trained, to prevent these from being attacked by coal blight; while others say that the flesh of the silurus[83] should be burnt in a slow fire, in such a way that the smoke may be dispersed by the wind throughout the vineyard.

Varro informs us, that if at the setting of the Lyre, which is the beginning of autumn, a painted grape[84] is consecrated in the midst of the vineyard, the bad weather will not be productive of such disastrous results as it otherwise would. Archibius[85] has stated, in a letter to Antiochus, king of Syria, that if a bramble-frog[86] is buried in a new earthen vessel, in the middle of a corn-field, there will be no storms to cause injury.

CHAP. 71.—WORK TO BE DONE AFTER THE SUMMER SOLSTICE.

The following are the rural occupations for this interval of time—the ground must have another turning up, and the trees must be cleared about the roots and moulded up, where the heat of the locality requires it. Those plants, however, which are in bud must not be spaded at the roots, except where the soil is particularly rich. The seed-plots, too, must be well cleared with the hoe, the barley-harvest got in, and the threshing-floor prepared for the harvest with chalk, as Cato[87] tells us, slackened with amurca of olives; Virgil[88] makes mention of a method still more laborious even. In general, however, it is considered sufficient to make it perfectly level, and then to cover it with a solution of cow-dung[89] and water; this being thought sufficient to prevent the dust from rising.

[82] This absurd practice is mentioned in the Geoponica, B. v. c. 31.

[83] As to this fish, see B. ix. c. 17.

[84] "Uva picta" This absurdity does not seem to be found in any of Varro's works that have come down to us.

[85] Nothing whatever is known of him or his works; and, as Fée says, apparently the loss is little to be regretted.

[86] Rubeta rana.

[87] De Re Rust. 129. Cato, however, does not mention chalk, but Virgil (Georg. i. 178) does. Poinsinet thinks that this is a "lapsus memoriæ" in Pliny, but Fée suggests that there may have been an omission by the copyists.

[88] See the last Note. He recommends that it should be turned up with the hand, rammed down with "tenacious chalk," and levelled with a large roller.

[89] Both cow-dung and marc of olives are still employed in some parts of France, in preparing the threshing floor.

CHAP. 72. (30.)—THE HARVEST.

The mode of getting in the harvest varies considerably. In the vast domains of the provinces of Gaul a large hollow frame,[90] armed with teeth and supported on two wheels, is driven through the standing corn, the beasts being yoked[91] behind it; the result being, that the ears are torn off and fall within the frame. In other countries the stalks are cut with the sickle in the middle, and the ears are separated by the aid of paddle-forks.[92] In some places, again, the corn is torn up by the roots; and it is asserted by those who adopt this plan, that it is as good as a light turning up for the ground, whereas, in reality, they deprive it of its juices.[93] There are differences in other respects also: in places where they thatch their houses with straw, they keep the longest haulms for that purpose; and where hay is scarce, they employ the straw for litter. The straw of panic is never used for thatching, and that of millet is mostly burnt; barley-straw, however, is always preserved, as being the most agreeable of all as a food for oxen. In the Gallic provinces panic and millet are gathered, ear by ear, with the aid of a comb carried in the hand.

In some places the corn is beaten out by machines[94] upon the threshing-floor, in others by the feet of mares, and in

[90] Palladius gives a long description of this contrivance, which seems to have been pushed forward by the ox; the teeth, which were sharp at the edge and fine at the point, catching the ears and tearing them off. But, as Fée says, the use of it must have been very disadvantageous, in consequence of the unequal height of the stalks. The straw, too, was sacrificed by the employment of it.

[91] In contrarium juncto.

[92] "Merges." Supposed to be the same as the "batillum" of Varro. Its form is unknown, and, indeed, the manner in which it was used. It is not improbable that it was a fork, sharp at the edge, and similar to an open pair of scissars, with which the heads of corn were driven off, as it were; this, however, is only a mere conjecture. By the use of "atque," it would almost appear that the "merges" was employed after the sickle had been used; but it is more probable that he refers to two different methods of gathering the ears of corn.

[93] The roots and the stubble are, in reality, as good as a manure to the land.

[94] Called "tribulum;" a threshing-machine moved by oxen. Varro, De Re Rust. i. 52, gives a description of it. Fée says that it is still used in some parts of Europe.

others with flails. The later wheat is cut, the more prolific[96] it is; but if it is got in early, the grain is finer and stronger. The best rule is to cut it before the grain hardens, and just as it is changing colour:[97] though the oracles on husbandry say that it is better to begin the harvest two days too soon than two days too late. Winter and other wheat must be treated exactly the same way both on the threshing-floor and in the granary. Spelt, as it is difficult to be threshed, should be stored with the chaff on, being only disengaged of the straw and the beard.

Many countries make use of chaff[98] for hay; the smoother and thinner it is, and the more nearly resembling dust, the better; hence it is that the chaff[99] of millet is considered the best, that of barley being the next best, and that of wheat the worst of all, except for beasts that are hard worked. In stony places they break the haulms, when dry, with staves, for the cattle to lie upon: if there is a deficiency of chaff, the straw as well is ground for food. The following is the method employed in preparing it: it is cut early and sprinkled with bay salt,[1] after which it is dried and rolled up in trusses, and given to the oxen as wanted, instead of hay. Some persons set fire to the stubble in the fields, a plan that has been greatly extolled by Virgil:[2] the chief merit of it is that the seed of the weeds is effectually destroyed. The diversity of the methods employed in harvesting mainly depends upon the extent of the crops and the price of labour.

CHAP. 73.—THE METHODS OF STORING CORN.

Connected with this branch of our subject is the method of storing corn. Some persons recommend that granaries should be built for the purpose at considerable expense, the walls

[96] On the contrary, Fée says, the risk is greater from the depredations of birds, and the chance of the grain falling out in cutting, and gathering in. Spelt and rye may be left much longer than wheat or oats.

[97] Columella, B. ii. c. i., gives the same advice.

[98] "Palea" seems here to mean "chaff;" though Fée understands it as meaning straw.

[99] The chaff of millet, and not the straw, must evidently be intended here, for he says above that the straw—"culmus"—of millet is generally burnt.

[1] Muria dura.

[2] Georg. i. 84, *et seq.* Fée says that Virgil has good reason for his commendations, as it is a most excellent plan.

being made of brick, and not less than three[3] feet thick; the corn, they say, should be let in from above, the air being carefully excluded, and no windows allowed. Others, again, say that the granary should have an aspect in no direction but the north-east or north, and that the walls should be built without lime, that substance being extremely injurious[4] to corn; as to what we find recommended in reference to amurca of olives, we have already mentioned it on a former[5] occasion. In some places they build their granaries of wood, and upon pillars,[6] thinking it the best plan to leave access for the air on every side, and from below even. Some persons think, however, that the grain diminishes in bulk if laid on a floor above the level of the ground, and that it is liable to ferment beneath a roof of tiles. Many persons say, too, that the grain should never be stirred up to air[7] it, as the weevil is never known to penetrate beyond four fingers in depth; consequently, beyond that depth there is no danger. According to Columella,[8] the west wind is beneficial to grain, a thing that surprises me, as that wind is generally a very parching[9] one. Some persons recommend that, before housing the corn, a bramble-frog should be hung up by one of the hind legs at the threshold of the granary. To me it appears that the most important precaution of all is to house the grain at the proper time; for if it is unripe when cut, and not sufficiently firm, or if it is got in in a heated state, it follows of necessity that noxious insects will breed in it.

There are several causes which contribute to the preservation of grain; the outer[10] coats in some kinds are more numerous, as in millet, for instance; the juices are of an oleaginous nature,[11] and so supply ample moisture, as in sesame, for example; while in other kinds, again, they are naturally

[3] Palladius, i. 19, says *two* feet.

[4] On account of the damp. Columella, however, recommends a mixture of sand, lime, and marc of olives for the floor; B. i. c. 6.

[5] In B. xv. c. 8.

[6] This is still done in the Valais, and has the great merit of preserving the corn from house and field-mice.

[7] "Ventilare." On the contrary, the weevil penetrates deep, and does not keep near the surface.

[8] De Re Rust. ii. 21.

[9] See B. ii. c. 48.

[10] Those keep the best, Fée says, which have a farinaceous perisperm. Millet has but one coat.

[11] This, in reality, would tend to make them turn rancid all the sooner.

bitter,[12] as in the lupine and the chicheling vetch. It is in wheat more particularly that insects breed, as it is apt to heat from the density of its juices, and the grain is covered with a thick bran. In barley the chaff is thinner, and the same is the case with all the leguminous seeds: it is for this reason that they do not ordinarily breed insects. The bean, however, is covered with a coat of a thicker substance; and hence it is that it ferments. Some persons sprinkle wheat, in order to make it keep the longer, with amurca[13] of olives, a quadrantal to a thousand modii: others, again, with powdered Chalcidian or Carian chalk, or with worm-wood.[14] There is a certain earth found at Olynthus, and at Cerinthus, in Eubœa, which prevents grain from spoiling. If garnered in the ear, grain is hardly ever found to suffer any injury.

The best plan, however, of preserving grain, is to lay it up in trenches, called "siri," as they do in Cappadocia, Thracia, Spain, and at * * * in Africa. Particular care is taken to dig these trenches in a dry soil, and a layer of chaff is then placed at the bottom; the grain, too, is always stored in the ear. In this case, if no air is allowed to penetrate to the corn, we may rest assured that no noxious insects will ever breed in it. Varro[15] says, that wheat, if thus stored, will keep as long as fifty years, and millet a hundred; and he assures us that beans and other leguminous grain, if put away in oil jars with a covering of ashes, will keep for a great length of time. He makes a statement, also, to the effect that some beans were preserved in a cavern in Ambracia from the time of King Pyrrhus until the Piratical War of Pompeius Magnus, a period of about two hundred and twenty years.

The chick-pea is the only grain in which no insect will breed while in the granary. Some persons place upon the heaps of the leguminous grains pitchers full of vinegar and coated with pitch, a stratum of ashes being laid beneath; and they fancy that if this is done, no injury will happen. Some, again, store them in vessels which have held salted provisions, with a coating of plaster on the top, while other persons are

[12] And so repel the attacks of insects.

[13] This would not only spoil the flavour, but absolutely injure the corn as well.

[14] This also, if practised to any extent, would infallibly spoil the grain.

[15] De Re Rust. i. 57.

in the habit of sprinkling lentils with vinegar scented with laser,[16] and, when dry, giving them a covering of oil. But the most effectual method of all is to get in everything that you would preserve from injury at the time of the moon's conjunction; and hence it is of the greatest importance to know, when getting in the harvest, whether it is for garnering or whether for immediate sale. If cut during the increase of the moon, grain will increase in size.

CHAP. 74. (31.)—THE VINTAGE, AND THE WORKS OF AUTUMN.

In accordance with the ordinary divisions of the year, we now come to autumn, a period which extends from the setting of the Lyre to the autumnal equinox, and from that to the setting of the Vergiliæ and the beginning of winter. In these intervals, the more important periods are marked by the rising of the Horse to the people of Attica, in the evening of the day before[17] the ides of August; upon which day also the Dolphin sets in Egypt, and, according to Cæsar, in Italy. On the eleventh[18] before the calends of September, the star called the Vintager begins to rise in the morning, according to Cæsar's reckoning, and to the people of Assyria; it announces the ripening of the vintage, a sure sign of which is the change of colour in the grape. On the fifth[19] before the calends of September, the Arrow sets in Assyria, and the Etesian winds cease to blow: on the nones[20] of September, the Vintager rises in Egypt, and in the morning of that day, Arcturus rises to the people of Attica: on the same morning, too, the Arrow sets. On the fifth before[21] the ides of September, according to Cæsar, the She-Goat rises in the evening; and one half of Arcturus becomes visible on the day before[22] the ides of September, being portentous[23] of boisterous weather for five days, both by land and sea.

The theory relative to the effects produced by Arcturus, is stated in the following terms: if showers prevail, it is said, at the setting of the Dolphin, they will not cease so long as Arcturus is visible. The departure of the swallows may be

[16] See B. xix. c. 15: also Columella, De Re Rust. B. ii. c. 10.
[17] Twelfth of August.
[18] Twenty-second of August.
[19] Twenty-eighth of August.
[20] Fifth of September.
[21] Ninth of September.
[22] Twelfth of September.
[23] See the Rudens of Plautus, Prol. l. 69.

looked upon as the sign of the rising of Arcturus; for if overtaken by it, they are sure to perish.

On the sixteenth day before [24] the calends of October, the Ear of Corn, which Virgo holds, rises to the people of Egypt in the morning, and by this day the Etesian winds have quite ceased to blow. According to Cæsar, this constellation rises on the fourteenth [25] before the calends, and it affords its prognostics to the Assyrians on the thirteenth. On the eleventh before [26] the calends of October, the point of junction [27] in Pisces disappears, and upon the eighth [28] is the autumnal equinox. It is a remarkable fact, and rarely the case, that Philippus, Callippus, Dositheus, Parmeniscus, Conon,[29] Criton, Democritus, and Eudoxus, all agree that the She-Goat rises in the morning of the fourth before [30] the calends of October, and on the third [31] the Kids. On the sixth day before [32] the nones of October, the Crown rises in the morning to the people of Attica, and upon the morning of the fifth,[33] the Charioteer sets. On the fourth before [34] the nones of October, the Crown, according to Cæsar's reckoning, begins to rise, and on the evening of the day after is the setting of the constellation of the Kids. On the eighth before [35] the ides of October, according to Cæsar, the bright star rises that shines in the Crown, and on the evening of the sixth before [36] the ides the Vergiliæ, rise. Upon the ides [37] of October, the Crown has wholly risen. On the seventeenth before [38] the calends of November, the Suculæ rise in the evening, and on the day before the calends, according to Cæsar's reckoning, Arcturus sets, and the Suculæ[39] rise with the sun. In the evening of the fourth day before [40] the nones of November, Arcturus sets. On the fifth before [41] the ides of November, Orion's Sword begins to set; and on the third [42] before the ides the Vergiliæ set.

[24] Sixteenth of September.
[25] Eighteenth of September.
[26] Twenty-first of September
[27] Commissura.
[28] Twenty-fourth of September.
[29] Mentioned by Virgil, Eccl. iii. l. 38, and by Propertius, Eleg. iv. 1.
[30] Twenty-eighth of September.
[31] Twenty-ninth of September.
[32] Second of October.
[33] Third of October.
[34] Fourth of October.
[35] Eighth of October.
[36] Tenth of October.
[37] Fifteenth of October.
[38] Sixteenth of October.
[39] Or Hyades, see C. 66.
[40] Second of November,
[41] Ninth of November.
[42] Eleventh of November.

In this interval of time, the rural operations consist in sowing rape and turnips, upon the days which have been mentioned on a previous occasion.[43] The people in the country are of opinion, that it is not a good plan to sow rape after the departure of the stork; but for my own part, I am of opinion that it should be sown after the Vulcanalia, and the early kind at the same time as panic. After the setting of the Lyre, vetches should be sown, kidney-beans and hay-grass: it is generally recommended that this should be done while the moon is in conjunction. This, too, is the proper time for gathering in the leaves: it is fair work for one woodman, to fill four baskets[44] in the day. If the leaves are gathered while the moon is on the wane, they will not decay; they ought not to be dry, however, when gathered.

The ancients were of opinion, that the vintage is never ripe before the equinox; but at the present day I find that it is gathered in before that period; it will be as well, therefore, to give the signs and indications by which the proper moment may be exactly ascertained. The rules for getting in the vintage are to the following effect: Never gather the grape in a heated state,[45] or in other words, when the weather is dry, and before the rains have fallen; nor ought it to be gathered when covered with dew,—or in other words, when dews have fallen during the night,—nor yet before the dews have been dispelled by the sun. Commence the vintage when the bearing-shoots begin to recline upon the stem, or when, after a grape is removed from the bunch, the space left empty is not filled up; this being a sure proof that the berry has ceased to increase in size. It is of the greatest consequence to the grape, that it should be gathered while the moon is on the increase. Each pressing should fill twenty culei,[46] that being the fair proportion. To fill twenty culei and vats[47] from twenty jugera of vineyard, a single press will be enough. In pressing the grape, some persons use a single press-board, but it is a better plan

[43] In c. 35 of this Book.

[44] "Frondarias fiscinas." These must have been baskets of a very large size. The leaves were used for fodder.

[45] This, Fée says, is diametrically opposite to the modern practice.

[46] The "culeus," it is supposed, was of the same measure of capacity as the "dolium," and held twenty amphoræ. The "pressura," or "pressing," was probably the utmost quantity that the pressing vat would hold at one time.

[47] "Lacus."

to employ two, however large the single ones may be. It is the length of them that is of the greatest consequence, and not the thickness: if wide, however, they press the fruit all the better. The ancients used to screw down the press-boards with ropes and leather thongs, worked by levers. Within the last hundred years the Greek press has been invented, with thick spiral grooves running down the[48] stem. To this stem there are spokes attached, which project like the rays of a star, and by means of which the stem is made to lift a box filled with stones —a method that is very highly approved of. It is only within the last two-and-twenty years, that a plan has been discovered of employing smaller press-boards, and a less unwieldy press: to effect this, the height has been reduced, and the stem of the screw placed in the middle, the whole pressure being concentrated upon broad planks[49] placed over the grapes, which are covered also with heavy weights above.

This is the proper time for gathering fruit; the best moment for doing so is when it has begun to fall through ripeness, and not from the effects of the weather. This is the season, too, for extracting the lees of wine, and for boiling defrutum:[50] this last must be done on a night when there is no moon, or if it is a full moon, in the day-time. At other times of the year, it must be done either before the moon has risen, or after it has set. The grapes employed for this purpose should never be gathered from a young vine, nor yet from a tree that is grown in a marshy spot, nor should any grapes be used but those that are perfectly ripe: the liquor, too, should never be skimmed with anything but a leaf,[51] for if the vessel should happen to be touched with wood, the liquor, it is generally thought, will have a burnt and smoky flavour.

The proper time for the vintage is between the equinox and the setting of the Vergiliæ, a period of forty-four days. It is a saying among the growers, that to pitch wine-vessels after that day, in consequence of the coldness of the weather, is only so much time lost. Still, however, I have seen, before now, persons getting in the vintage on the calends of January[52]

[48] "Mali rugis per cocleas bullantibus." The whole of this passage is full of difficulties.

[49] "Tympana;" literally, "drums."

[50] Grape juice boiled down to one half; see B. xiv. c. 9.

[51] Virgil mentions this in the Georgics, B i. 295. Of course, it is nothing but an absurd superstition.

[52] First of January.

even, in consequence of the want of wine-vessels, and putting the must into receivers,[53] or else pouring the old wine out of its vessels, to make room for new liquor of a very doubtful quality. This, however, happens not so often in consequence of an over-abundant crop, as through carelessness, or else the avarice which leads people to wait for a rise in prices. The method that is adopted by the most economical managers, is to use the produce supplied by each year,[54] and this, too, is found in the end the most lucrative mode of proceeding. As for the other details relative to wines, they have been discussed at sufficient length already;[55] and it has been stated on a previous occasion,[56] that as soon as the vintage is got in, the olives should at once be gathered, with other particulars relative to the olive after the setting of the Vergiliæ.

CHAP. 75. (32.)—THE REVOLUTIONS OF THE MOON.

I shall now proceed to add some necessary information relative to the moon, the winds, and certain signs and prognostics, in order that I may complete the observations I have to make with reference to the sidereal system. Virgil[57] has even gone so far, in imitation of Democritus, as to assign certain operations to certain days[58] of the moon; but my sole object shall be, as, indeed, it has been throughout this work, to consult that utility which is based upon a knowledge and appreciation of general principles.

All vegetable productions are cut, gathered, and housed to more advantage while the moon is on the wane than while it is on the increase. Manure must never be touched except when the moon is on the wane; and land must be manured more particularly while the moon is in conjunction, or else at the first quarter. Take care to geld your boars, bulls, rams, and kids, while the moon is on the wane. Put eggs under the hen at a new moon. Make your ditches in the night-time, when the moon is at full. Cover up the roots of trees, while the moon is at full. Where the soil is humid, put in seed

[53] Piscinis.

[54] *I. e.* before getting in the next year's crop. Of course, he alludes only to wines of an inferior class, used for domestic consumption.

[55] In B. xiv. [56] In B. xv. c. 3.

[57] Georg. i. 276.

[58] In contradistinction to the two periods of full moon. and change of the moon, the only epochs in reference to it noticed by Pliny.

at the moon's conjunction, and during the four days about that period. It is generally recommended, too, to give an airing to corn and the leguminous grains, and to garner them, towards the end of the moon; to make seed-plots when the moon is above the horizon; and to tread out the grape, to fell timber, and to do many other things that have been mentioned in their respective places, when the moon is below it.

The observation of the moon, in general, as already observed in the Second Book,[59] is not so very easy, but what I am about here to state even rustics will be able to comprehend: so long as the moon is seen in the west, and during the earlier hours of the night, she will be on the increase, and one half of her disk will be perceived; but when the moon is seen to rise at sun-set and opposite to the sun, so that they are both perceptible at the same moment, she will be at full. Again, as often as the moon rises in the east, and does not give her light in the earlier hours of the night, but shows herself during a portion of the day, she will be on the wane, and one half of her only will again be perceptible: when the moon has ceased to be visible, she is in conjunction, a period known to us as "interlunium."[60] During the conjunction, the moon will be above the horizon the same time as the sun, for the whole of the first day; on the second, she will advance upon the night ten-twelfths of an hour and one-fourth of a twelfth;[61] on the third day, the same as on the second, and * * * so on in succession up to the fifteenth day, the same proportional parts of an hour being added each day. On the fifteenth day she will be above the horizon all night, and below it all day. On the sixteenth, she will remain below the horizon ten-twelfths of an hour, and one-fourth of a twelfth, at the first hour of the night, and so on in the same proportion day after day, up to the period of her conjunction; and thus, the same time which, by remaining under the horizon, she withdraws from the first part of the night, she will add to the end of the night by remaining above the horizon. Her revolutions, too, will occupy thirty days one month, and twenty-nine the next, and so on alternately. Such is the theory of the revolutions of the moon.

[59] In Chapters 6, 7, 8 and 11.

[60] Or "between moons." The "change of the moon," as we call it.

[61] $51\frac{1}{4}$ minutes.

CHAP. 76. (33.)—THE THEORY OF THE WINDS.

The theory of the winds[62] is of a somewhat more intricate nature. After observing the quarter in which the sun rises on any given day, at the sixth[63] hour of the day take your position in such a manner as to have the point of the sun's rising on your left; you will then have the south directly facing you, and the north at your back: a line drawn through a field in this direction[64] is called the "cardinal"[65] line. The observer must then turn round, so as to look upon his shadow, for it will be behind him. Having thus changed his position, so as to bring the point of the sun's rising on that day to the right, and that of his setting to the left, it will be the sixth hour of the day, at the moment when the shadow straight before him is the shortest. Through the middle of this shadow, taken lengthwise, a furrow must be traced in the ground with a hoe, or else a line drawn with ashes, some twenty feet in length, say; in the middle of this line, or, in other words, at the tenth foot in it, a small circle must then be described: to this circle we may give the name of the "umbilicus," or "navel." That point in the line which lies on the side of the head of the shadow will be the point from which the north wind blows. You who are engaged in pruning trees, be it your care that the incisions made in the wood do not face this point; nor should the vine-trees[66] or the vines have this aspect, except in the climates of Africa,[67] Cyrenæ, or Egypt. When the wind blows, too, from this point, you must never plough, nor, in fact, attempt any other of the operations of which we shall have to make mention.[68]

That part of the line which lies between the umbilicus and the feet of the shadow will look towards the south, and indicate the point from which the south wind[69] blows, to which, as already mentioned,[70] the Greeks have given the name of Notus. When the wind comes from this quarter, you, husbandman, must never fell wood or touch the vine. In Italy

[62] Many of his statements are drawn from Aristotle's Treatise, "De Mundo."
[63] Our mid-day.
[64] From due north to due south.
[65] Cardo.
[66] "Arbusta." The trees on which the vines were trained.
[67] *I. e.* the north-west of Africa; the Roman province so called.
[68] In the next Chapter.
[69] Ventus Auster.
[70] In B. ii. c. 46.

this wind is either humid or else of a burning heat, and in Africa it is accompanied with intense heat[71] and fine clear weather. In Italy the bearing branches should be trained to face this quarter, but the incisions made in the trees or vines when pruned must never face it. Let those be on their guard against this wind upon the four[72] days at the rising of the Vergiliæ, who are engaged in planting the olive, as well as those who are employed in the operations of grafting or inoculating.

It will be as well, too, here to give some advice, in reference to the climate of Italy, as to certain precautions to be observed at certain hours of the day. You, woodman, must never lop the branches in the middle of the day; and you, shepherd, when you see midday approaching in summer, and the shadow gradually decreasing, drive your flocks from out of the sun into some well-shaded spot. When you lead the flocks to pasture in summer, let them face the west before midday,[73] and after that time, the east: if this precaution is not adopted, calamitous results will ensue; the same, too, if the flocks are led in winter or spring to pastures covered with dew. Nor must you let them feed with their faces to the north, as already mentioned;[74] for the wind will either close their eyes or else make them bleared, and they will die of looseness. If you wish to have females,[75] you should let the dams have their faces towards the north while being covered.

CHAP. 77. (34.)—THE LAYING OUT OF LANDS ACCORDING TO THE POINTS OF THE WIND.

We have already stated[76] that the umbilicus should be described in the middle of the line. Let another line be drawn transversely through the middle of it, and it will be found to run from due east to due west; a trench cut through the land in accordance with this line is known by the name of "decumanus." Two other lines must then be traced obliquely across them in the form of the letter X, in such a way as to

[71] Incendia.

[72] See B. xvii. c. 2.

[73] See B. viii. c. 75.

[74] He seems to be in error here, as he has nowhere made mention of this.

[75] Aristotle, on the other hand, and Columella, B. vii. c. 3, say "males." See also B. viii. c. 72, where males are mentioned in connection with the north-wind. Also the next Chapter in this Book.

[76] In the last Chapter

run exactly from right and left of the northern point to left and right of the southern one. All these lines must pass through the centre of the umbilicus, and all must be of corresponding length, and at equal distances. This method should always be adopted in laying out land; or if it should be found necessary to employ it frequently, a plan[77] of it may be made in wood, sticks of equal length being fixed upon the surface of a small tambour,[78] but perfectly round. In the method which I am here explaining, it is necessary to point out one precaution that must always be observed by those who are unacquainted with the subject. The point that must be verified first of all is the south, as that is always the same; but the sun, it must be remembered, rises every day at a point in the heavens different to that of his rising on the day before, so that the east must never be taken as the basis for tracing the lines.

Having now ascertained the various points of the heavens, the extremity of the line that is nearest to the north, but lying to the east of it, will indicate the solstitial rising, or, in other words, the rising of the sun on the longest day, as also the point from which the wind Aquilo[79] blows, known to the Greeks by the name of Boreas. You should plant all trees and vines facing this point, but take care never to plough, or sow corn, or plant in seed plots, while this wind is blowing, for it has the effect of drying up and blasting the roots of the trees while being transplanted. Be taught in time—one thing is good for grown trees, another for them while they are but young. Nor have I forgotten the fact, that it is at this point of the heavens that the Greeks place the wind, to which they give the name of Cæcias; Aristotle, a man of most extensive learning, who has assigned to Cæcias this position, explains that it is in consequence of the convexity of the earth, that Aquilo blows in an opposite direction to the wind called Africus.

The agriculturist, however, has nothing to fear from Aquilo, in respect to the operations before mentioned, all the year through; for this wind is softened by the sun in the middle of

[77] Very similar to our compass, but describing only eight points of the wind, instead of thirty-two.

[78] "Tympanum," a drum, similar in shape to our tambourines or else kettle-drums.

[79] See B. ii. c. 46.

the summer, and, changing its name, is known by that of Etesias.[80] When you feel the cold, then, be on your guard; for, whatever the noxious effects that are attributed to Aquilo, the more sensibly will they be felt when the wind blows from due north. In Asia, Greece, Spain, the coasts of Italy, Campania, and Apulia, the trees that support the vines, as well as the vines themselves, should have an aspect towards the north-east. If you wish to have male produce, let the flock feed in such a way, that this wind may have the opportunity of fecundating the male, whose office it is to fecundate the females. The wind Africus, known to the Greeks by the name of Libs, blows from the south-west, the opposite point to Aquilo; when animals, after coupling, turn their heads towards this quarter,[81] you may be sure that female produce has been conceived.

The third[82] line from the north, which we have drawn transversely through the shadow, and called by the name of "decumanus," will point due east, and from this quarter the wind Subsolanus blows, by the Greeks called Apeliotes. It is to this point that, in healthy localities, farm-houses and vineyards are made to look. This wind is accompanied with soft, gentle showers; Favonius, however, the wind that blows from due west, the opposite quarter to it, is of a drier nature; by the Greeks it is known as Zephyrus. Cato has recommended that olive-yards should look due west. It is this wind that begins the spring, and opens the earth; it is moderately cool, but healthy. As soon as it begins to prevail, it indicates that the time has arrived for pruning the vine, weeding the corn, planting trees, grafting fruit-trees, and trimming the olive; for its breezes are productive of the most nutritious effects.

The fourth[83] line from the north, and the one that lies nearest the south on the eastern side, will indicate the point of the sun's rising at the winter solstice, and the wind Volturnus, known by the name of Eurus to the Greeks. This wind is warm and dry, and beehives and vineyards, in the climates of Italy and the Gallic provinces, should face this quarter. Directly opposite to Volturnus, the wind Corus blows; it indicates the point of the sun's setting at the summer solstice,

[80] Or the "summer" wind.

[81] Africus, or south-west.

[82] Or, according to our mode of expression, the "second," or "next but one."

[83] Or, as we say, the "third."

and lies on the western side next to the north. By the Greeks it is called Argestes, and is one of the very coldest of the winds, which, in fact, is the case with all the winds that blow from the north; this wind, too, brings hailstorms with it, for which reason it is necessary to be on our guard against it no less than the north. If Volturnus begins to blow from a clear quarter of the heavens, it will not last till night; but if it is Subsolanus, it will prevail for the greater part of the night. Whatever the wind that may happen to be blowing, if it is accompanied by heat, it will be sure to last for several days. The earth announces the approach of Aquilo, by drying on a sudden, while on the approach of Auster, the surface becomes moist without any apparent cause.

CHAP. 78. (35.)—PROGNOSTICS DERIVED FROM THE SUN.

Having now explained the theory of the winds, it seems to me the best plan, in order to avoid any repetition, to pass on to the other signs and prognostics that are indicative of a change of weather. I find, too, that this is a kind of knowledge that greatly interested Virgil,[84] for he mentions the fact, that during the harvest even, he has often seen the winds engage in a combat that was absolutely ruinous to the improvident agriculturist. There is a tradition, too, to the effect that Democritus, already mentioned, when his brother Damasus was getting in his harvest in extremely hot weather, entreated him to leave the rest of the crop, and house with all haste that which had been cut; and it was only within a very few hours that his prediction was verified by a most violent storm. On the other hand, it is particularly recommended never to plant reeds except when rain is impending, and only to sow corn just before a shower; we shall therefore briefly touch upon the prognostics of this description, making enquiry more particularly into those among them that have been found the most useful.

In the first place, then, we will consider those prognostics of the weather which are derived from the sun.[85] If the sun is bright at its rising, and not burning hot, it is indicative of fine

[84] Georg. i. 313, *et seq.*

"Sæpe ego, quum flavis messorem induceret arvis
Agricola, et fragili jam stringeret hordea culmo,
Omnia ventorum concurrere prœlia vidi."

[85] See the Treatise of Theophrastus on the Prognostics of the Weather.

weather, but if pale, it announces wintry weather accompanied with hail. If the sun is bright and clear when it sets, and if it rises with a similar appearance, the more assured of fine weather may we feel ourselves. If it is hidden in clouds at its rising, it is indicative of rain, and of wind, when the clouds are of a reddish colour just before sunrise; if black clouds are intermingled with the red ones, they betoken rain as well. When the sun's rays at its rising or setting appear to unite, rainy weather may be looked for. When the clouds are red at sunset, they give promise [86] of a fine day on the morrow; but if, at the sun's rising, the clouds are dispersed in various quarters, some to the south, and some to the north-east, even though the heavens in the vicinity of the sun may be bright, they are significant of rain and wind. If at the sun's rising or setting, its rays appear contracted, they announce the approach of a shower. If it rains at sunset, or if the sun's rays attract the clouds towards them, it is portentous of stormy weather on the following day. When the sun, at its rising, does not emit vivid rays, although there are no clouds surrounding it, rain may be expected. If before sunrise the clouds collect into dense masses, they are portentous of a violent storm; but if they are repelled from the east and travel westward, they indicate fine weather. When clouds are seen surrounding the face of the sun, the less the light they leave, the more violent the tempest will be: but if they form a double circle round the sun, the storm will be a dreadful one. If this takes place at sunrise or sunset, and the clouds assume a red hue, the approach of a most violent storm is announced: and if the clouds hang over the face of the sun without surrounding it, they presage wind from the quarter from which they are drifting, and rain as well, if they come from the south.

If, at its rising, the sun is surrounded with a circle, wind may be looked for in the quarter in which the circle breaks; but if it disappears equally throughout, it is indicative of fine weather. If the sun at its rising throws out its rays afar through the clouds, and the middle of its disk is clear, there will be rain; and if its rays are seen before it rises, both rain and wind as well. If a white circle is seen round the sun at its setting, there will be a slight storm in the night; but if there

[86] This, Fée observes, is confirmed by experience. Aratus, as translated by Avienus, states to a similar effect.

is a mist around it, the storm will be more violent. If the sun is pale at sunset, there will be wind, and if there is a dark circle round it, high winds will arise in the quarter in which the circle breaks.

CHAP. 79.—PROGNOSTICS DERIVED FROM THE MOON.

The prognostics derived from the moon, assert their right to occupy our notice in the second place. In Egypt, attention is paid, more particularly, to the fourth day of the moon. If, when the moon rises, she shines with a pure bright light, it is generally supposed that we shall have fine weather; but if she is red, there will be wind, and if of a swarthy[87] hue, rain. If upon the fifth day of the moon her horns are obtuse, they are always indicative of rain, but if sharp and erect, of wind, and this on the fourth day of the moon more particularly. If her northern horn is pointed and erect, it portends wind; and if it is the lower horn that presents this appearance, the wind will be from the south; if both of them are erect, there will be high winds in the night. If upon the fourth day of the moon she is surrounded by a red circle, it is portentous of wind and rain.

In Varro we find it stated to the following effect:—"If, at the fourth day of the moon, her horns are erect, there will be great storms at sea, unless, indeed, she has a circlet[88] around her, and that circlet unblemished; for by that sign we are informed that there will be no stormy weather before full moon. If, at the full moon, one half of her disk is clear, it is indicative of fine weather, but if it is red, of wind, and if black, of rain. If a darkness comes over the face of the moon, covered with clouds, in whatever quarter it breaks, from that quarter wind may be expected. If a twofold circle surrounds the moon, the storm will be more violent, and even more so still, if there are three circles, or if they are black, broken, and disjointed. If the new moon at her rising has the upper horn obscured, there will be a prevalence of rainy weather, when she is on the wane; but if it is the lower horn that is obscured, there will be rain before full moon; if, again, the moon is darkened in the middle of her disk, there will be rain when she is at full. If the moon, when full, has a circle round her, it indicates wind from the quarter in the circle which is the brightest; but if at her rising the

[87] So Virgil, Georg. i. 427. [88] Coronam.

horns are obtuse, they are portentous of a frightful tempest. If, when the west wind prevails, the moon does not make her appearance before her fourth day, there will be a prevalence of stormy weather throughout the month. If on the sixteenth day the moon has a bright, flaming appearance, it is a presage of violent tempests."

There are eight different epochs of the moon, or periods at which she makes certain angles of incidence with the sun, and most persons only notice the prognostics derived from the moon, according to the places which they occupy between these angles. The periods of these angles are the third day, the seventh, the eleventh, the fifteenth, the nineteenth, the twenty-third, the twenty-seventh, and that of the conjunction.

CHAP. 80.—PROGNOSTICS DERIVED FROM THE STARS.

In the third rank must be placed the prognostics derived from the stars. These bodies are sometimes to be seen shooting to and fro;[89] when this happens, winds immediately ensue, in that part of the heavens in which the presage has been afforded. When the heavens are equally bright throughout their whole expanse, at the periods previously mentioned,[90] the ensuing autumn will be fine and cool. If the spring and summer have passed not without some rain, the autumn will be fine and settled,[91] and there will be but little wind: when the autumn is fine, it makes a windy winter. When the brightness of the stars is suddenly obscured, though without[92] clouds or fog, violent tempests may be expected. If numerous stars are seen to shoot,[93] leaving a white track behind them, they presage wind from that quarter.[93*] If they follow in quick succession from the same quarter, the wind will blow steadily, but if from various quarters of the heavens, the wind will shift in sudden gusts and squalls. If circles are seen to surround any of the planets, there will be rain.[94] In the constellation

[89] See B. ii. c. 6 and c. 36.

[90] In c. 59 of this Book

[91] "Densum." Fée says that this is in general confirmed by experience.

[92] This results, Fée says, from the presence of thin, aqueous vapours, which portend a change in the atmosphere.

[93] Fée attributes this phænomenon to hydrosulphuric gas, ignited in the air by an electric spark. The notion that these meteors are stars, was prevalent to a very recent period.

[93*] To which they proceed.

[94] This, Fée says, is confirmed by experience.

of Cancer, there are two small stars to be seen, known as the Aselli,[95] the small space that lies between them being occupied by a cloudy appearance, which is known as the Manger;[96] when this cloud is not visible in a clear sky, it is a presage of a violent storm. If a fog conceals from our view the one of these stars which lies to the north-east, there will be high winds from the south; but if it is the star which lies to the south that is so obscured, then the wind will be from the north-east. The rainbow, when double, indicates the approach[97] of rain; but if seen after rain, it gives promise, though by no means a certain one, of fine weather. Circular clouds around some of the stars are indicative of rain.

CHAP. 81.—PROGNOSTICS DERIVED FROM THUNDER.

When, in summer, there is more thunder than lightning, wind may be expected from that quarter; but if, on the other hand, there is not so much thunder as lightning, there will be a fall of rain. When it lightens in a clear sky, there will be rain, and if there is thunder as well, stormy weather; but if it lightens from all four quarters of the heavens, there will be a dreadful tempest. When it lightens from the north-east only, it portends rain on the following day; but when from the north, wind may be expected from that quarter. When it lightens on a clear night from the south, the west, or the north-west, there will be wind and rain from those quarters. Thunder[98] in the morning is indicative of wind, and at midday of rain.

CHAP. 82.—PROGNOSTICS DERIVED FROM CLOUDS.

When clouds are seen moving in a clear sky, wind may be expected in the quarter from which they proceed; but if they accumulate in one spot, as they approach the sun they will disperse. If the clouds are dispersed by a north-east wind, it is a presage of high winds, but if by a wind from the south, of rain. If at sunset the clouds cover the heavens on either side of the sun, they are indicative of tempest; if they are black and lowering in the east, they threaten rain in the night, but if in the west, on the following day. If the clouds spread in

[95] Or "Little Asses." [96] Præsepia.
[97] This, as Fée remarks, is consistent with experience.
[98] This, Fée remarks, appears to be consistent with general experience.

large numbers from the east, like fleeces of wool in appearance, they indicate a continuance of rain for the next three days. When the clouds settle on the summits of the mountains,[99] there will be stormy weather; but if the clouds clear away, it will be fine. When the clouds are white and lowering, a hail-storm, generally known as a "white"[1] tempest, is close at hand. An isolated cloud, however small,[2] though seen in a clear sky, announces wind and storm.

CHAP. 83.—PROGNOSTICS DERIVED FROM MISTS.

Mists descending from the summits of mountains, or from the heavens, or settling in the vallies,[3] give promise of fine weather.

CHAP. 84.—PROGNOSTICS DERIVED FROM FIRE KINDLED BY MAN.

Next to these are the prognostics that are derived from fire kindled upon the earth.[4] If the flames are pallid, and emit a murmuring noise, they are considered to presage stormy weather; and fungi upon the burning wick of the lamp are a sign of rain.[5] If the flame is spiral and flickering, it is an indication of wind, and the same is the case when the lamp goes out of itself, or is lighted with difficulty. So, too, if the snuff hangs down, and sparks gather upon it, or if the burning coals adhere[6] to vessels taken from off the fire, or if the fire, when covered up, sends out hot embers or emits sparks, or if the cinders gather into a mass upon the hearth, or the coals burn bright and glowing.

CHAP. 85.—PROGNOSTICS DERIVED FROM WATER.

There are certain prognostics, too, that may be derived from

[99] Theophrastus states to a similar effect, and it is confirmed by the experience of those who live in mountainous countries.

[1] We still hear of the "white squalls" of the Mediterranean.

[2] "'Behold, there ariseth a little cloud out of the sea, like a man's hand.'——And it came to pass in the meanwhile, that the heaven was black with clouds and wind, and there was a great rain."—1 Kings, xviii. 44, 45.

[3] The truth of this, Fée says, he has personally experienced in the vallies of the Alps.

[4] Terreni ignes.

[5] This, and the other phænomena here mentioned, result, as Fée says, from the hygrometric state of the air. Virgil mentions this appearance on the wick of the lamp, Georg. i. 392.

[6] Fée thinks that this indicates fine weather rather than rain, as showing a pure state of the atmosphere.

water. If, when the sea is calm, the water ripples in the harbour, with a hollow, murmuring noise, it is a sign of wind, and if in winter, of rain as well. If the coasts and shores recho while the sea is calm, a violent tempest may be expected; and the same when the sea, though calm, is heard to roar, or throws up foam and bubbling spray. If sea pulmones[7] are to be seen floating on the surface, they are portentous of stormy weather for many days to come. Very frequently, too, the sea is seen to swell in silence, and more so than when ruffled by an ordinary breeze; this is an indication that the winds are at work within its bosom already.

CHAP. 86.—PROGNOSTICS DERIVED FROM TEMPESTS THEMSELVES.

The reverberations, too, of the mountains, and the roaring of the forests, are indicative of certain phænomena; and the same is the case when the leaves are seen to quiver,[8] without a breath of wind, the downy filaments of the poplar or thorn to float in the air, and feathers to skim along the surface of the water.[9] In champaign countries, the storm gives notice of its approach by that peculiar muttering[10] which precedes it; while the murmuring that is heard in the heavens affords us no doubtful presage of what is to come.

CHAP. 87.—PROGNOSTICS DERIVED FROM AQUATIC ANIMALS, AND BIRDS.

The animals, too, afford us certain presages; dolphins, for instance, sporting in a calm sea, announce wind in the quarter from which they make their appearance.[11] When they throw up the water in a billowy sea, they announce the approach of a calm. The loligo,[12] springing out of the water, shell-fish adhering to various objects, sea-urchins fastening by their stickles upon the sand, or else burrowing in it, are so many in-

7 Sea-"lungs." See B. ix. c. 71. 8 Ludentia.

9 Virgil mentions these indications, Georg. i. 368-9.

10 "Suus fragor." The winds, Fée remarks, however violent they may be, make no noise unless they meet with an obstacle which arrests their onward progress.

11 Theophrastus, Cicero, and Plutarch state to a similar effect; and it is corroborated by the experience of most mariners.

12 The ink-fish; Sepia loligo of Linnæus. See B. ix. c. 21.

dications of stormy weather: the same, too, when frogs[12] croak more than usual, or coots[14] make a chattering in the morning. Divers, too, and ducks, when they clean their feathers with the bill, announce high winds; which is the case also when the aquatic birds unite in flocks, cranes make for the interior, and divers[15] and sea-mews forsake the sea or the creeks. Cranes when they fly aloft in silence announce fine weather, and so does the owlet,[16] when it screeches during a shower; but if it is heard in fine weather, it presages a storm. Ravens, too, when they croak with a sort of gurgling noise and shake their feathers, give warning of the approach of wind, if their note is continuous: but if, on the other hand, it is smothered, and only heard at broken intervals, we may expect rain, accompanied with high winds. Jackdaws, when they return late from feeding, give notice of stormy weather, and the same with the white birds,[17] when they unite in flocks, and the land birds, when they descend with cries to the water and besprinkle themselves, the crow more particularly. The swallow,[18] too, when it skims along the surface of the water, so near as to ripple it every now and then with its wings, and the birds that dwell in the trees, when they hide themselves in their nests, afford similar indications; geese, too, when they set up a continuous gabbling,[19] at an unusual time, and the heron,[20] when it stands moping in the middle of the sands.

CHAP. 88.—PROGNOSTICS DERIVED FROM QUADRUPEDS.

Nor, indeed, is it surprising that the aquatic birds, or any birds, in fact, should have a perception of the impending

[13] Virgil says the same, Georg. i. 378.

[14] "Fulicæ." See B. x. c. 61, and B. xi. c. 44.

[15] Virgil says the same of the diver, or didapper, Georg. i. 361; and Lucan, Pharsalia, v. 553.

[16] Both Theophrastus and Ælian mention this.

[17] It is not known what bird is here alluded to, but Fée is probably right in suggesting a sort of sea-mew, or gull.

[18] This is still considered a prognostic of rain. Fée says that the swallow descends thus near to the surface to catch the insects on the wing, which are now disabled from rising by the hygrometric state of the atmosphere.

[19] This is confirmed by experience.

[20] On the contrary, Lucan says (Pharsalia, B. v. l. 549), that on the approach of rain, the heron soars in the upper regions of the air; and Virgil says the same, Georg. i. 364.

changes of the atmosphere. Sheep, however, when they skip and frisk with their clumsy gambols,[21] afford us similar prognostics; oxen, when they snuff upwards towards the sky, and lick[22] themselves against the hair; unclean swine, when they tear to pieces the trusses of hay that are put for other animals;[23] bees, when, contrary to their natural habits of industry, they keep close within the hive; ants, when they hurry to and fro, or are seen carrying forth their eggs; and earth-worms,[24] emerging from their holes—all these indicate approaching changes in the weather.

CHAP. 89.—PROGNOSTICS DERIVED FROM PLANTS.

It is a well-known fact, that trefoil bristles up, and its leaves stand erect, upon the approach of a tempest.

CHAP. 90.—PROGNOSTICS DERIVED FROM FOOD.

At our repasts, too, and upon our tables, when we see the vessels sweat in which the viands are served, and leave marks upon the side-board,[25] it is an indication that a dreadful storm is impending.

SUMMARY.—Remarkable facts, narratives, and observations, two thousand and sixty.

ROMAN AUTHORS QUOTED.—Massurius Sabinus,[26] Cassius Hemina,[27] Verrius Flaccus,[28] L. Piso,[29] Cornelius Celsus,[30] Turranius Gracilis,[31] D. Silanus,[32] M. Varro,[33] Cato the Censor,[34] Scrofa,[35] the Sasernæ,[36] father and son, Domitius Calvinus,[37]

21 Indecorâ lasciviâ.

22 Fée suggests that they probably do this to diminish the electric fluid with which the air is charged.

23 Alienos sibi manipulos.

24 This is confirmed by common experience.

25 "Repositoriis." See B. xix. c. 13, and B. xxx. c. 49.

26 See end of B. vii.

27 See end of B. xii.

28 See end of B. iii.

29 See end of B. ii.

30 See end of B. vii.

31 See end of B. iii.

32 See end of B. xiv.

33 See end of B. ii.

34 See end of B. iii.

35 See end of B. xi.

36 See end of B. x.

37 See end of B. xi.

Hyginus,[38] Virgil,[39] Trogus,[40] Ovid,[41] Græcinus,[42] Columella,[43] Tubero,[44] L. Tarutius,[45] who wrote in Greek on the Stars, Cæsar[46] the Dictator, who wrote upon the Stars, Sergius Paulus,[47] Sabinus Fabianus,[48] M. Cicero,[49] Calpurnius Bassus,[50] Ateius Capito,[51] Mamilius Sura,[52] Attius,[53] who wrote the Praxidica.

FOREIGN AUTHORS QUOTED.—Hesiod,[54] Theophrastus,[55] Aristotle,[56] Democritus,[57] King Hiero,[58] King Attalus Philometor,[59] King Archelaüs,[60] Archytas,[61] Xenophon,[62] Amphilochus[63] of

[38] See end of B. iii.
[39] See end of B. vii.
[40] See end of B. vii.
[41] A native of Sulmo, in the country of the Peligni, and one of the greatest poets of the Augustan age. It is most probable that his "Fasti" was extensively consulted by Pliny in the compilation of the present Book. Six Books of the Fasti have come down to us, but the remaining six have perished, if, indeed, they were ever written, which has been doubted by many of the learned.
[42] See end of B. xiv.
[43] See end of B. viii.
[44] See end of B. ii. It is supposed that there were several writers of this name, but it is impossible to say with certainty which of them is the one here referred to. It is probable, however, that it is either L. Ælius Tubero, the friend of Cicero, or else Q. Ælius Tubero, his son, that is alluded to.
[45] L. Tarutius Firmianus, a mathematician and astronomer, and a friend and contemporary of Cicero and M. Varro. At the request of the latter, he took the horoscope of Romulus. It is generally supposed that he was of Etruscan descent.
[46] The founder of the imperial dignity at Rome. His Commentaries are the only work written by him that has come down to us. His treatise on the Stars, which Pliny frequently quotes throughout this Book, was probably written under the inspection of the astronomer, Sosigenes.
[47] See end of B. ii.
[48] Nothing is known of this writer. It has been suggested, however, that he may have been the same person as Papirius Fabianus, mentioned at the end of B. ii.
[49] See end of B. vii.
[50] See end of B. xvi.
[51] See end of B. iii.
[52] See end of B. x.
[53] L. Accius, or Attius, an early Roman tragic poet, and the son of a freedman, born about B.C. 170. His tragedies were chiefly imitations from the Greek. He is highly praised by Cicero. The "Praxidica" here mentioned, is probably the same as the "Pragmatica" spoken of by Aulus Gellius, B. xx. c. 3. Only some fragments of his Tragedies are left.
[54] See end of B. vii.
[55] See end of B. iii.
[56] See end of B. ii.
[57] See end of B. ii.
[58] See end of B. viii.
[59] See end of B. viii.
[60] See end of B. viii.
[61] See end of B. viii.
[62] See end of B. iv.
[63] See end of B. viii.

Athens, Anaxipolis[61] of Thasos, Aristophanes[65] of Miletus, Apollodorus[66] of Lemnos, Antigonus[67] of Cymæ, Agathocles[68] of Chios, Apollonius[69] of Pergamus, Aristander[70] of Athens, Bacchius[71] of Miletus, Bion[72] of Soli, Chæreas[73] of Athens, Chæristus[74] of Athens, Diodorus[75] of Priene, Dion[76] of Colophon, Epigenes[77] of Rhodes, Euagon[78] of Thasos, Euphronius[79] of Athens, Androtion[80] who wrote on Agriculture, Æschrion[81] who wrote on Agriculture, Lysimachus[82] who wrote on Agriculture, Dionysius[83] who translated Mago, Diophanes[84] who made an Epitome from Dionysius, Thales,[85] Eudoxus,[86] Philippus,[87] Calippus,[88] Dositheus,[89] Parmeniscus,[90] Meton,[91] Criton,[92]

[61] See end of B. ix.
[65] See end of B. viii.
[66] See end of B. viii.
[67] See end of B. viii.
[68] See end of B. viii.
[69] See end of B. viii.
[70] See end of B. viii.
[71] See end of B. viii.
[72] See end of B. vi.
[73] See end of B. viii.
[74] See end of B. xiv.
[75] See end of B. xv.
[76] See end of B. viii.
[77] See end of B. ii.
[78] See end of B. x.
[79] See end of B. viii.
[80] See end of B viii.
[81] See end of B. viii.
[82] See end of B. viii.
[83] See end of B. xii.
[84] See end of B. viii.

[85] Of Miletus, the most ancient of the Greek philosophers, and the founder of the Ionian school of Philosophy. He is said to have written upon the Solstice and the Equinox, and a work on Astronomy, in verse, was also attributed to him. It is, however, more generally believed, that he left no written works behind him, and that those attributed to him were forgeries.

[86] See end of B. ii.

[87] An astronomer of Medama, or Medma, in Magna Græcia, and a disciple of Plato. He is said to have written a treatise on the winds, and Plutarch states that he demonstrated the figure of the moon.

[88] An astronomer of Cyzicus, and a friend of Aristotle, whom he assisted in completing the discoveries of Eudoxus. He invented the cycle of seventy-six years, called after him the Calippic.

[89] Of Colonus, a geometrician, to whom Archimedes dedicated his works on the sphere and cylinder, and on spirals.

[90] A grammarian, who is supposed to have written a commentary on Aratus. Varro, De Ling. Lat. x. 10, speaks of him as making the distinctive characteristics of words to be eight in number.

[91] A famous astronomer of Athens, to whom the discovery of the cycle of nineteen years has been attributed.

[92] There were several learned men of this name, but it appears impossible to say which of them is the one here alluded to; probably it is either the Pythagorean philosopher of Ægæ, who wrote on Predestination, or else the historian, a native of Pieria in Macedonia. There was also an astronomer of this name, a native of Naxos, and a friend of Eudoxus of Cnidos.

Œnopides,[93] Zenon,[94] Euctemon,[95] Harpalus,[96] Hecatæus,[97] Anaximander,[98] Sosigenes,[99] Hipparchus,[1] Aratus,[2] Zoroaster,[3] Archibius.[4]

[93] A famous astronomer, a native of Chios. He is said to have claimed the discovery of the obliquity of the Ecliptic.

[94] Probably Zenon of Elea, one of the most famous philosophers of antiquity. All of his works had perished at a very early period.

[95] An Athenian astronomer, the friend and assistant of Meton, about 430 B.C.

[96] An astronomer mentioned by Censorinus, as having corrected the intercalation of Cleostratus. Nothing further appears to be known of him.

[97] For Hecatæus of Miletus, see B. iv. For Hecatæus of Abdera, see B. vi.

[98] See end of B. iv.

[99] See end of B. ii.

[1] See end of B. ii.

[2] A native of Soli, or else Tarsus, in Cilicia. He was the author of two Greek astronomical poems which have come down to us. He flourished about B.C. 270.

[3] Nothing can be said of him with any degree of historical certainty. By the Persians he was called Zerdusht, and was said to have been the founder of the Magian religion. There were several works in Greek bearing his name, but which, no doubt, were forgeries of a later age than that usually assigned to him.

[4] He is mentioned in c. 70 of this Book, as writing a letter to Antiochus, king of Syria; but nothing further seems to be known of him.

BOOK XIX.

THE NATURE AND CULTIVATION OF FLAX, AND AN ACCOUNT OF VARIOUS GARDEN PLANTS.

CHAP. 1.—THE NATURE OF FLAX—MARVELLOUS FACTS RELATIVE THERETO.

We have now imparted a knowledge[1] of the constellations and of the seasons, in a method unattended with difficulty for the most ignorant even, and free from every doubt; indeed, to those who understand these matters aright, the face of the earth contributes in no less a degree to a due appreciation of the celestial phænomena, than does the science of astronomy to our improvement in the arts of agriculture.

Many writers have made it their next care to treat of horticulture; but, for my own part, it does not appear to me altogether advisable to pass on immediately to that subject, and, indeed, I am rather surprised to find that some among the learned, who have either sought the pleasures of knowledge in these pursuits, or have grounded their celebrity upon them, have omitted so many particulars in reference thereto; for no mention do we find in their writings of numerous vegetable productions, both wild as well as cultivated, many of which are found, in ordinary life, to be of higher value and of more extended use to man than the cereals even.

To commence, then, with a production which is of an utility that is universally recognized, and is employed not only upon dry land but upon the seas as well, we will turn our attention to flax,[2] a plant which is reproduced from seed, but which can neither be classed among the cereals nor yet among the garden plants. What department is there to be found of active life in which flax is not employed? and in what production of the earth are there greater marvels[3] revealed to us

[1] More particularly in B. xvii. cc. 2 and 3, and B. xviii. cc. 57—75.

[2] The Linum usitatissimum of Linnæus.

[3] What would he have said to the application of the powers of steam, and the electric telegraph?

than in this? To think that here is a plant which brings Egypt in close proximity to Italy!—so much so, in fact, that Galerius[4] and Balbillus,[5] both of them prefects of Egypt, made the passage to Alexandria from the Straits of Sicily, the one in six days, the other in five! It was only this very last summer, that Valerius Marianus, a senator of prætorian rank, reached Alexandria from Puteoli in eight days, and that, too, with a very moderate breeze all the time! To think that here is a plant which brings Gades, situate near the Pillars of Hercules, within six days of Ostia, Nearer Spain within three, the province of Gallia Narbonensis within two, and Africa within one!—this last passage having been made by C. Flavius, when legatus of Vibius Crispus, the proconsul, and that, too, with but little or no wind to favour his passage!

What audacity in man! What criminal perverseness! thus to sow a thing in the ground for the purpose of catching the winds and the tempests, it being not enough for him, forsooth, to be borne upon the waves alone! Nay, still more than this, sails even that are bigger than the very ships themselves will not suffice for him, and although it takes a whole tree to make a mast to carry the cross-yards, above those cross-yards sails upon sails must still be added, with others swelling at the prow and at the stern as well—so many devices, in fact, to challenge death! Only to think, in fine, that that which moves to and fro, as it were, the various countries of the earth, should spring from a seed so minute, and make its appearance in a stem so fine, so little elevated above the surface of the earth! And then, besides, it is not in all its native strength that it is employed for the purposes of a tissue; no, it must first be rent asunder, and then tawed and beaten, till it is reduced to the softness of wool; indeed, it is only by such violence done to its nature, and prompted by the extreme audacity of man, and[6] * * * that it is rendered subservient to his purposes. The inventor of this art has been

[4] Possibly Galerius Trachalus, Consul A.D. 68, a relation of Galeria Fundana, the wife of the Emperor Vitellius.

[5] Governor of Egypt in the reign of Nero, A.D. 55. He is mentioned by Seneca, Quæst. Nat. B. iv. c. 2, and is supposed to have written a work on Egypt and his journeys in that country.

[6] Or, as Sillig suggests, "after ill treatment such as this, that it arrives at the sea." The passage is evidently defective.

already mentioned by us on a more appropriate occasion;[7] not satisfied that his fellow-men should perish upon land, but anxious that they should meet their end with no sepulchral rites to await them, there are no execrations[8] to be found that can equal his demerits!

It is only in the preceding Book[9] that I was warning the agriculturist, as he values the grain that is to form our daily sustenance, to be on his guard against the storm and the tempest; and yet, here we have man sowing with his own hand, man racking his invention how best to gather, an object the only aspirations of which upon the deep are the winds of heaven! And then, too, as if to let us understand all the better how highly favoured is this instrument of our punishment, there is no vegetable production that grows with greater facility;[10] and, to prove to us that it is in despite of Nature herself that it exists, it has the property of scorching[11] the ground where it is grown, and of deteriorating the quality of the very soil itself.

CHAP. 2. (1.)—HOW FLAX IS SOWN: TWENTY-SEVEN PRINCIPAL VARIETIES OF IT.

Flax is mostly sown in sandy[12] soils, and after a single ploughing only. There is no plant that grows more rapidly[13]

[7] In B. vii. c. 57. He alludes to Dædalus.

[8] He probably has in view here the imprecation uttered by Horace:—

"Illi robur, et æs triplex
Circa pectus erat, qui fragilem truci
Commisit pelago ratem."—*Odes*, i. 3.

At the present day hemp forms a material part in the manufacture of sails. In addition to flax, the ancients employed broom, rushes, leather, and various skins of animals for the purpose.

[9] In c. 76.

[10] On the contrary, as Fée observes, the cultivation of flax is attended with the greatest difficulties.

[11] See B. xvii. c. 7. Virgil says, Georg. i. 77, "Urit enim lini campum seges"—but in the sense, as Fée remarks, of *exhausting*, not *scorching* the soil.

[12] A light soil, and well manured, is usually employed for the purpose. Columella, B. ii. c. 10, recommends a rich, moist soil. It is sown in March or April, and is gathered, according to the season, from June to September.

[13] Though rapid in its growth, there are many vegetable productions that grow more rapidly.

than this; sown in spring,[14] it is pulled up in summer, and is, for this reason as well, productive of considerable injury to the soil.[15] There may be some, however, who would forgive Egypt for growing it, as it is by its aid that she imports the merchandize of Arabia and India; but why should the Gallic provinces base any of their reputation upon this product?[16] Is it not enough, forsooth, for them to be separated by mountains from the sea, and to have, upon the side on which they are bounded by the Ocean, that void and empty space, as it is called?[17] The Cadurci,[18] the Caleti, the Ruteni,[19] the Bituriges,[20] and the Morini,[21] those remotest of all mankind, as it is supposed, the whole of the Gallic provinces, in fact, are in the habit of weaving sail-cloth; and at the present day our enemies even, who dwell beyond the Rhenus, have learned to do the same; indeed, there is no tissue that is more beautiful in the eyes of their females than linen. I am here reminded of the fact, that we find it stated by M. Varro, that it is a custom peculiar to the family of the Serrani[22] for the women never to wear garments of linen. In Germany it is in caves[23] deep underground that the linen-weavers ply their work; and the same is the case, too, in the Alian territory, in Italy, between the rivers Padus and Ticinus, the linen of which holds the third rank among the kinds manufactured in Europe, that of Sætabis[24] claiming the first, and those of Retovium[25] and of Faven-

[14] This was the time for sowing it with the Romans, though in some countries, at the present day, it is sown so late as the autumn.

[15] In B. xviii. c. 72, he has spoken of this method of gathering vegetable productions as injurious to the soil, by withdrawing its natural juices.

[16] "Censentur hoc reditu?" There is little doubt that the Gauls, like their German neighbours, cultivated flax for the purposes of female dress, and not mainly for the manufacture of sails.

[17] "Quod vocant inane." He implies that the boundless space of ocean on the Western coasts of Gaul was useless for any purposes of navigation.

[18] See B. iv. c. 33.

[19] See B. iv. c. 33.

[20] See B. xxxiv. c. 48.

[21] See B. iv. c. 31.

[22] A family of the Atilia gens.

[23] It was, and is still to some extent, a prevalent opinion, that the humidity of caves under-ground is favourable to the manufacture of tissues of hemp and flax.

[24] In Spain. See B. i. c. 1, and B. iii. c. 4.

[25] Cluvier takes this place to be the same with Litubium in Liguria, mentioned by Livy, B. xxxii.

tia, in the vicinity of Alia, on the Æmilian Way, the second, place in general estimation. The linens of Faventia are preferred for whiteness to those of Alia, which are always unbleached: those of Retovium are remarkable for their extreme fineness, combined with substance, and are quite equal in whiteness to the linens of Faventia; but they have none of that fine downy nap [26] upon them, which is so highly esteemed by some persons, though equally disliked by others. A thread is made, too, from their flax, of considerable strength, smoother and more even, almost, than the spider's web; when tested with the teeth, it emits a sharp, clear twang; hence it is, that it sells at double the price of the other kinds.

But it is the province of Nearer Spain that produces a linen of the greatest lustre, an advantage which it owes to the waters of a stream which washes the city of Tarraco [27] there. The fineness, too, of this linen is quite marvellous, and here it is that the first manufactories of cambric [28] were established. From the same province, too, of Spain, the flax of Zoëla [29] has of late years been introduced into Italy, and has been found extremely serviceable for the manufacture of hunting-nets. Zoëla is a city of Callæcia, in the vicinity of the Ocean. The flax, too, of Cumæ, in Campania, has its own peculiar merits in the manufacture of nets for fishing and fowling; it is employed, also, for making hunting-nets. For it is from flax, in fact, that we prepare various textures, destined to be no less insidious to the brute creation than they are to ourselves. It is with toils made from the flax of Cumæ that wild boars are taken, the meshes being proof against their bristles,[30] equally with the edge of the knife: before now, too, we have seen some of these toils of a fineness so remarkable[31] as to allow of being

[26] "Lanugo." This is not generally looked upon as a merit in linen, at the present day.

[27] Now Tarragona. See B. iii. c. 4.

[28] "Carbasus." This was probably the Spanish name originally for fine flax, and hence came to signify the cambrics, or fine linen tissues made of it. It seems, however, to have afterwards been extended to all kinds of linen tissues, as we find the name given indifferently to linen garments, sail-cloth, and awnings for the theatres.

[29] See B. iii. c. 4.

[30] "Sætas ceu per ferri aciem vincunt." This passage is probably in a mutilated state.

[31] There must either be some corruption in the text, or else Pliny must have been mistaken. Nets such as these could have been of no possible use in taking a wild boar.

passed through a man's ring, running ropes and all, a single individual being able to carry an amount of nets sufficient to environ a whole forest—a thing which we know to have been done not long ago by Julius Lupus, who died prefect of Egypt. This, however, is nothing very surprising, but it really is quite wonderful that each of the cords was composed of no less than one hundred and fifty threads. Those, no doubt, will be astonished at this, who are not aware that there is preserved in the Temple of Minerva, at Lindus, in the Isle of Rhodes, the cuirass of a former king of Egypt, Amasis by name, each thread employed in the texture of which is composed of three hundred and sixty-five other threads. Mucianus, who was three times consul, informs us that he saw this curiosity very recently, though there was but little then remaining of it, in consequence of the injury it had experienced at the hands of various persons who had tried to verify the fact. Italy, too, holds the flax of the Peligni in high esteem, though it is only employed by fullers; there is no kind known that is whiter than this, or which bears a closer resemblance to wool. That grown by the Cadurci[32] is held in high estimation for making mattresses;[33] which, as well as flock,[34] are an invention for which we are indebted to the Gauls: the ancient usage of Italy is still kept in remembrance in the word "stramentum,"[35] the name given by us to beds stuffed with straw.

The flax of Egypt, though the least strong[36] of all as a tissue, is that from which the greatest profits are derived. There are four varieties of it, the Tanitic, the Pelusiac, the Butic, and the Tentyritic—so called from the various districts in which they are respectively grown. The upper part of Egypt, in the vicinity of Arabia, produces a shrub, known by some as "gossypium,"[37] but by most persons as "xylon;" hence the

[32] See B. iv. c. 33. Now Querci, the chief town of which is Cahors.

[33] "Culcitæ." [34] "Tomenta."

[35] Exactly corresponding to our "paillasse," a "bed of straw."

[36] This is doubtful, though at the same time it is a well-known fact that the Egyptian flax grows to the greatest size. Hasselquist speaks of it attaining a height of fifteen feet.

[37] Our cotton, the Gossypium arboreum of Linnæus. See B. xii. c. 21. The terms *xylon*, *byssus*, and *gossypium*, must be regarded as synonymous, being applied sometimes to the plant, sometimes to the raw cotton, and sometimes to the tissues made from it. *Gossypium* was probably the barbarous name of the cotton tree, and *byssus* perhaps a corruption of its Hebrew name.

name of "xylina," given to the tissues that are manufactured from it. The shrub is small, and bears a fruit, similar in appearance to a nut with a beard, and containing in the inside a silky substance, the down of which is spun into threads. There is no tissue known, that is superior to those made from this thread, either for whiteness, softness, or dressing: the most esteemed vestments worn by the priests of Egypt are made of it. There is a fourth kind of tissue, known by the name of "othoninum," which is made from a kind of marsh-reed,[38] the panicule only being employed for the purpose. In Asia, again, there is a thread made from broom,[39] which is employed in the construction of fishing-nets, being found to be remarkably durable; for the purpose of preparing it, the shrub is steeped in water for ten days. The Æthiopians, also, and the people of India, prepare a kind of thread from a fruit which resembles our apple, and the Arabians, as already[40] mentioned, from gourds that grow upon trees.

CHAP. 3.—THE MODE OF PREPARING FLAX.

In our part of the world the ripeness of flax is usually ascertained by two signs, the swelling of the seed, and its assuming a yellowish tint. It is then pulled up by the roots, made up into small sheaves that will just fill the hand, and hung to dry in the sun. It is suspended with the roots upwards the first day, and then for the five following days the heads of the sheaves are placed, reclining one against the other, in such a way that the seed which drops out may fall into the middle. Linseed is employed for various medicinal[40*] purposes, and it is used by the country-people of Italy beyond the Padus in a certain kind of food, which is remarkable for its sweet-

[38] Probably the Arundo donax of modern botanists. See B. xvi. c. 66.

[39] Fée says, that the people of Pisa, at the present day, soak the stalks of broom, and extract therefrom a thread, of which cords and coarse stuffs are made.

[40] In B. xii. c. 21. He seems there to speak of the cotton-tree, though Fée suggests that he may possibly allude to the "Bombax pentandrum" of Linnæus.

[40*] It is the mucilage of the perisperm that is so useful in medicine. As an article of food, the farina of linseed is held in no esteem whatever. In times of scarcity, attempts have been made to mix it with flour or meal, but the result has been found to be heavy and indigestible, and has caused, it is said, the death even of those who have eaten of it in considerable quantities.

ness: for this long time past, however, it has only been in general use for sacrifices offered to the divinities. After the wheat harvest is over, the stalks of flax are plunged in water that has been warmed in the sun, and are then submitted to pressure with a weight; for there is nothing known that is more light and buoyant than this. When the outer coat is loosened, it is a sign that the stalks have been sufficiently steeped; after which[41] they are again turned with the heads downwards, and left to dry as before in the sun: when thoroughly dried, they are beaten with a tow-mallet on a stone.

The part that lies nearest to the outer coat is known by the name of "stuppa;" it is a flax of inferior quality, and is mostly employed for making the wicks of lamps. This, however, requires to be combed out with iron hatchels, until the whole of the outer skin is removed. The inner part presents numerous varieties of flax, esteemed respectively in proportion to their whiteness and their softness. Spinning flax is held to be an honourable[42] employment for men even: the husks, or outer coats, are employed for heating furnaces and ovens. There is a certain amount of skill required in hatchelling flax and dressing it: it is a fair proportion for fifty pounds in the sheaf to yield fifteen pounds of flax combed out. When spun into thread, it is rendered additionally supple by being soaked in water and then beaten out upon a stone; and after it is woven into a tissue, it is again beaten with heavy maces: indeed, the more roughly it is treated the better it is.

CHAP. 4.—LINEN MADE OF ASBESTOS.

There has been invented also a kind of linen which is incombustible by flame. It is generally known as "live"[43] linen, and I have seen, before now, napkins[44] that were made of it

[41] There are various other methods employed of dressing flax at the present day; but they are all of them long and tedious.

[42] And not feminine or servile.

[43] "Vivum."

[44] He evidently considers asbestus, or amianthus, to be a vegetable, and not a mineral production. It is, in reality, a mineral, with long flexible filaments, of a silky appearance, and is composed of silica, magnesia, and lime. The wicks of the inextinguishable lamps of the middle ages, the existence of which was an article of general belief, were said to be made of asbestus. Paper and lace, even, have been made of it in modern times.

thrown into a blazing fire, in the room where the guests were at table, and after the stains were burnt out, come forth from the flames whiter and cleaner than they could possibly have been rendered by the aid of water. It is from this material that the corpse-cloths of monarchs are made, to ensure the separation of the ashes of the body from those of the pile. This substance grows[45] in the deserts of India,[46] scorched by the burning rays of the sun: here, where no rain is ever known to fall, and amid multitudes of deadly serpents, it becomes habituated to resist the action of fire. Rarely to be found, it presents considerable difficulties in weaving it into a tissue, in consequence of its shortness; its colour is naturally red, and it only becomes white through the agency of fire. By those who find it, it is sold at prices equal to those given for the finest pearls; by the Greeks it is called "asbestinon,"[47] a name which indicates its peculiar properties. Anaxilaüs[48] makes a statement to the effect that if a tree is surrounded with linen made of this substance, the noise of the blows given by the axe will be deadened thereby, and that the tree may be cut down without their being heard. For these qualities it is that this linen occupies the very highest rank among all the kinds that are known.

The next rank is accorded to the tissue known as "byssus,"[49] an article which is held in the very highest estimation by females, and is produced in the vicinity of Elis, in Achaia.[50] I find it stated by some writers that a scruple of this sold for-

[45] "Nascitur." In the year 1702 there was found near the Nævian Gate, at Rome, a funereal urn, in which there was a skull, calcined bones, and other ashes, enclosed in a cloth of asbestus, of a marvellous length. It is still preserved in the Vatican.

[46] On the contrary, it is found in the Higher Alps in the vicinity of the Glaciers, in Scotland, and in Siberia, even.

[47] Signifying "inextinguishable," from *ἀ*, "not," and *σβέννυμι*, "to extinguish." See B. xxxvii. c. 54.

[48] See end of this Book.

[49] He evidently alludes to cotton fabrics under this name. See Note 37 to c. 2 of this Book.

[50] Pausanias, in his Eliaca, goes so far as to say, that byssus was found only in Elis, and nowhere else. Judging from the variable temperature of the climate, it is very doubtful, Fée says, if cotton was grown there *at all*. Arrian, Apollonius, and Philostratus say that the tree which produced the *byssus* had the leaves of the willow, and the shape of the poplar, characteristics which certainly do not apply to the cotton-tree.

merly at four denarii, the same rate, in fact, as gold. The downy nap of linen, and more particularly that taken from the sails of sea-going ships, is very extensively employed for medicinal purposes, and the ashes of it have the same virtues as spodium.[51] Among the poppies, too,[52] there is a variety which imparts a remarkable degree of whiteness to fabrics made of linen.

CHAP. 5.—AT WHAT PERIOD LINEN WAS FIRST DYED.

Attempts, too, have even been made to dye linen, and to make it assume the frivolous colours[53] of our cloths. This was first done in the fleet of Alexander the Great, while sailing upon the river Indus; for, upon one occasion, during a battle that was being fought, his generals and captains distinguished their vessels by the various tints of their sails, and astounded the people on the shores by giving their many colours to the breeze, as it impelled them on. It was with sails of purple, too, that Cleopatra accompanied M. Antonius to the battle of Actium, and it was by their aid that she took to flight: such being the distinguishing mark of the royal ship.

CHAP. 6.—AT WHAT PERIOD COLOURED AWNINGS WERE FIRST EMPLOYED IN THE THEATRES.

In more recent[54] times linens alone have been employed for the purpose of affording shade in our theatres; Q. Catulus having been the first who applied them to this use, on the occasion of the dedication by him of the Capitol. At a later period, Lentulus Spinther, it is said, was the first to spread awnings of fine linen[55] over the theatre, at the celebration of the Games in honour of Apollo. After this, Cæsar,

[51] Impure oxide of metals, collected from the chimneys of smelting-houses. Fée says that Pliny on this occasion is right.

[52] In B. xx. c. 79, he speaks of the "heraclion" poppy, supposed by some of the commentators to be identical with the one mentioned here.

[53] "Vestium insaniam."

[54] "Postea." Sillig would reject this word, as being a corruption, and not consistent with fact, Catulus having lived before the time of Cleopatra. He suggests that the reading should be "Populo Romano ea in theatris spectanti umbram fecere." "Linen, too, has provided a shade for the Roman people, when viewing the spectacles of the theatre." Lucretius, B. iv. l. 73, *et seq.*, speaks of these awnings as being red, yellow, and iron grey.

[55] "Carbasina." Cambric.

when Dictator, covered with a linen awning the whole of the Roman Forum, as well as the Sacred Way, from his own house as far as the ascent to the Capitol, a sight, it is said, more wonderful even than the show of gladiators which he then exhibited. At a still later period, and upon the occasion of no public games, Marcellus, the son of Octavia, sister of Augustus, during his ædileship, and in the eleventh consulship of his uncle, on the * * * day before the calends of August, covered in the Forum with awnings, his object being to consult the health of those assembled there for the purposes of litigation —a vast change, indeed, from the manners prevalent in the days of Cato the Censor, who expressed a wish that the Forum was paved with nothing else but sharp pointed stones.

Awnings have been lately extended, too, by the aid of ropes, over the amphitheatres of the Emperor Nero, dyed azure, like the heavens, and bespangled all over with stars. Those which are employed by us to cover the inner court[56] of our houses are generally red: one reason for employing them is to protect the moss that grows there from the rays[57] of the sun. In other respects, white fabrics of linen have always held the ascendancy in public estimation. Linen, too, was highly valued as early as the Trojan war; for why else should it not have figured as much in battles as it did in shipwrecks? Thus Homer,[58] we find, bears witness that there were but few among the warriors of those days who fought with cuirasses[59] on made of linen; while, as for the rigging of the ships, of which that writer speaks, it is generally supposed by the more learned among the commentators, that it was made of this material; for the word "sparta,"[60] which he employs, means nothing more than the produce of a seed.

CHAP. 7. (2.)—THE NATURE OF SPARTUM.

For the fact is that spartum[61] did not begin to be employed

[56] The cavædium is generally supposed to have been the same as the "atrium," the large inner apartment, roofed over, with the exception of an opening in the middle, which was called the "compluvium," or "impluvium," over which the awning here mentioned was stretched. Here the master of the house received his visitors and clients.

[57] White would be much preferable to red for this purpose.

[58] Il. ii. ll. 529 and 830. [59] Il. viii. l. 63.

[60] Il. ii. l. 135. See B. xxiv. c. 40.

[61] The Stipa tenacissima of Linnæus; a kind of broom, called "Esparto" by the Spaniards.

till many ages after the time of Homer; indeed, not before the first war that the Carthaginians waged in Spain. This, too, is a plant that grows spontaneously,[62] and is incapable of being reproduced by sowing, it being a species of rush, peculiar to a dry, arid soil, a morbid production confined to a single country only; for in reality it is a curse to the soil, as there is nothing whatever that can be sown or grown in its vicinity. There is a kind of spartum grown in Africa,[63] of a stunted nature, and quite useless for all practical purposes. It is found in one portion of the province of Carthage[64] in Nearer Spain, though not in every part of that; but wherever it is produced, the mountains, even, are covered all over with it.

This material is employed by the country-people there for making[65] their beds; with it they kindle their fires also, and prepare their torches; shoes[66] also, and garments for the shepherds, are made of it. As a food for animals, it is highly injurious,[67] with the sole exception of the tender tops of the shoots. When wanted for other uses, it is pulled up by the roots, with considerable labour; the legs of the persons so employed being protected by boots, and their hands with gloves, the plant being twisted round levers of bone or holm-oak, to get it up with the greater facility. At the present day it is gathered in the winter, even; but this work is done with the least difficulty between the ides of May[68] and those of June, that being the period at which it is perfectly ripe.

CHAP. 8.—THE MODE OF PREPARING SPARTUM.

When taken up it is made into sheaves, and laid in heaps for a couple of days, while it retains its life and freshness; on the third day the sheaves are opened out and spread in the sun

[62] Although, as Fée says, this is still the fact, it is a plant which would readily admit of cultivation. Varro, however, De Re Rust. B. i. c. 23, speaks of it in conjunction with hemp, flax, and rushes, as being sown.

[63] This kind, Fée thinks, may possibly have been identical with the Spartum Lygeum of Linnæus, false esparto, or alvarde.

[64] At the present day it is only in the provinces on the Mediterranean that spartum is found; the other provinces producing nothing but alvarde.

[65] It is still used in the southern parts of Spain for the same purposes.

[66] The shoes now made of it are known as "espartenas" and "alpargatas."

[67] It is not dangerous in itself, but is too tough to be a favourite article of food with cattle.

[68] Fifteenth of May and thirteenth of June.

to dry, after which it is again made up into sheaves, and placed under cover. It is then put to soak in sea-water, this being the best of all for the purpose, though fresh water will do in case sea-water cannot be procured: this done, it is again dried in the sun, and then moistened afresh. If it is wanted for immediate use, it is put in a tub and steeped in warm water, after which it is placed in an upright position to dry: this being universally admitted to be the most expeditious method of preparing it. To make it ready for use, it requires to be beaten out. Articles made of it are proof, more particularly, against the action of fresh or sea-water; but on dry land, ropes of hemp are generally preferred. Indeed, we find that spartum receives nutriment even from being under water, by way of compensation, as it were, for the thirst it has had to endure upon its native soil.

By nature it is peculiarly well adapted for repairing, and however old the material may be, it unites very well with new. The person, indeed, who is desirous duly to appreciate this marvellous plant, has only to consider the numerous uses to which, in all parts of the world, it is applied: from it are made, the rigging of ships, various appliances of mechanism employed in building, and numerous other articles which supply the wants of daily life. To suffice for all these requirements, we find it growing solely on a tract of ground which lies upon the sea-line of the province of New Carthage, somewhat less than thirty miles in breadth by one hundred in length. The expense precludes its being transported to any very considerable distance.

CHAP. 9.—AT WHAT PERIOD SPARTUM WAS FIRST EMPLOYED.

The Greeks used formerly to employ the rush for making ropes; so, at least, we are led to believe, from the name[69] given by them to that plant; and at a later period they made them, it is very clear, from the leaves of the palm, and the inner bark of the linden-tree. It seems to me very probable, too, that it was from them that the Carthaginians borrowed the first hint for applying spartum to a similar purpose.

CHAP. 10.—THE BULB ERIOPHORUS.

Theophrastus[70] informs us, that there is a kind of bulb, which

[69] The same word, σχοῖνος, signifying both a "rush" and a "rope."

[70] Hist. Plant. B. vii. c. 13. Athenæus, B. ii., mentions it also.

grows on the banks of rivers, and which encloses between the outer coat and the portion that is eaten a sort of woolly substance, of which felt socks, and other articles of dress, are made; but, in the copies, those at least which have fallen in my way, there is no mention made of the country in which it grows, or of any details in connection with it, beyond the fact that the name given to it is "eriophoron."[71] As to spartum, he makes no[72] mention of it whatever, although he has given the history, with the greatest exactness, of all the known plants, three hundred and ninety years before our time—a fact to which I have already[73] alluded on other occasions: from this it would appear that spartum has come into use since his day.

CHAP. 11.—PLANTS WHICH SPRING UP AND GROW WITHOUT A ROOT—PLANTS WHICH GROW, BUT CANNOT BE REPRODUCED FROM SEED.

As we have here made a beginning of treating of the marvels of Nature, we shall proceed to examine them in detail; and among them the very greatest of all, beyond a doubt, is the fact that any plant should spring up and grow without a root. Such, for instance, is the vegetable production known as the truffle;[74] surrounded on every side by earth, it is connected with it by no fibres, not so much as a single thread even, while the spot in which it grows, presents neither protuberance nor cleft to the view. It is found, in fact, in no way adhering to the earth, but enclosed within an outer coat; so much so, indeed, that though we cannot exactly pronounce it to be composed of earth, we must conclude that it is nothing else but a callous[75] concretion of the earth.

[71] Fée is at a loss to identify this plant, but considers it quite clear that it is not the same with the Eriophorum augustifolium of Linnæus, a cyperaceous plant, of which the characteristics are totally different. Dodonæus, however, was inclined to consider them identical.

[72] On the contrary, Theophrastus *does* mention it, in the Hist. Plant. B. i. c. 8, and speaks of it as having a bark composed of several tunics or membranes.

[73] In B. xiii. c. 13, and B. xv. c. 1.

[74] "Tuber." The Tuber cibarium of Linnæus, the black truffle; and probably the grey truffle, the Tuber griseum.

[75] This callous secretion of the earth, or corticle, is, as Fée says, a sort of hymenium, formed of vesicles, which, as they develope themselves, are

Truffles generally grow in dry, sandy soils, and spots that are thickly covered with shrubs; in size they are often larger than a quince, and are found to weigh as much [76] as a pound. There are two kinds of them, the one full of sand, and consequently injurious to the teeth, the other free from sand and all impurities. They are distinguished also by their colour, which is red or black, and white within; those of Africa [77] are the most esteemed. Whether the truffle grows gradually, or whether this blemish of the earth—for it can be looked upon as nothing else—at once assumes the globular form and magnitude which it presents when found; whether, too, it is possessed of vitality or not, are all of them questions, which, in my opinion, are not easy to be solved. It decays and rots in a manner precisely similar to wood.

It is known to me as a fact, that the following circumstance happened to Lartius Licinius, a person of prætorian rank, while minister of justice,[78] a few years ago, at Carthage in Spain; upon biting a truffle, he found a denarius inside, which all but broke his fore teeth—an evident proof that the truffle is nothing else but an agglomeration of elementary earth. At all events, it is quite certain that the truffle belongs to those vegetable productions which spring up spontaneously, and are incapable of being reproduced from seed.[79]

CHAP. 12. (3.)—MISY; ITON; AND GERANION.

Of a similar nature, too, is the vegetable production known in the province of Cyrenaica by the name of "misy,"[80] re-

found to contain diminutive truffles. Pliny is wrong in saying that the truffle forms neither cleft nor protuberance, as the exact contrary is the fact.

[76] Haller speaks of truffles weighing as much as fourteen pounds. Valmont de Bomare speaks of a truffle commonly found in Savoy, which attains the weight of a pound.

[77] Those of Africa are in general similar to those found in Europe, but there is one peculiar to that country, possibly the same that is mentioned in the following Chapter under the name of "misy."

[78] "Jura reddenti."

[79] It is really propagated by spores, included in sinuous chambers in the interior; but, notwithstanding the attempts that have been made, it has never yet been cultivated with any degree of success. In c. 13, Pliny seems to recognize the possibility of its multiplication by germs, where he says that its formation is attributed by some to water.

[80] Fée takes this to be the Tuber niveum of Desfontaines, the snow-white truffle. It is globular and somewhat piriform, grows to the size of a walnut, and sometimes of an orange, and is said to be most delicate eating.

markable for the sweetness of its smell and taste, but more fleshy than the truffle: the same, too, as to the iton[81] of the Thracians, and the geranion of the Greeks.

CHAP. 13.—PARTICULARS CONNECTED WITH THE TRUFFLE.

The following peculiarities we find mentioned with reference to the truffle. When there have been showers in autumn, and frequent thunder-storms, truffles are produced, thunder[82] contributing more particularly to their developement; they do not, however, last beyond a year, and are considered the most delicate eating when gathered in spring. In some places the formation of them is attributed to water; as at Mytilene,[83] for instance, where they are never to be found, it is said, unless the rivers overflow, and bring down the seed from Tiara, that being the name of a place at which they are produced in the greatest abundance. The finest truffles of Asia are those found in the neighbourhood of Lampsacus and Alopeconnesus; the best in Greece are those of the vicinity of Elis.

CHAP. 14.—THE PEZICA.

Belonging to the mushroom genus, also, there is a species, known to the Greeks by the name of "pezica,"[84] which grows without either root or stalk.

CHAP. 15.—LASERPITIUM, LASER, AND MASPETUM.

Next to these, laserpitium[85] claims our notice, a very re-

[81] These truffles or morels do not appear to have been identified.

[82] Juvenal alludes to this absurd notion, Sat. v. l. 116. "The long wished-for thunder will provide a more ample repast."

[83] Theophrastus, as quoted by Athenæus, B. ii. speaks of this.

[84] "Peziza" was a name given by the ancients to a kind of cupuliform mushroom; in which, however, we cannot recognize the "pezica" of Pliny. Some writers think that this was the same as the lycoperdon and geastrum of botanists, our puff-ball: while others take it to be the morel, the Morchella esculenta, Sprengel in the number. Fée is inclined to be of opinion that an edible mushroom is meant, but is quite at a loss to identify it.

[85] Possibly the Ferula asafœtida of Linnæus; or, according to some, the Thapsia silphium of Viviani, *Flor. Lib.* It was a plant common, according to ancient writers, to Syria, Armenia, Media, and Libya; but it was the produce of this last country, probably, that afforded the juice or gum resin here mentioned as "laser," and so highly esteemed by the ancients, as forming a component part of their perfumes. Fée is inclined to think that the Laserpitium here spoken of was the Thapsia silphium, and to

markable plant, known to the Greeks by the name of "silphion," and originally a native of the province of Cyrenaica. The juice of this plant is called "laser," and it is greatly in vogue for medicinal as well as other purposes, being sold at the same rate as silver. For these many years past, however, it has not been found in Cyrenaica,[86] as the farmers of the revenue who hold the lands there on lease, have a notion that it is more profitable to depasture flocks of sheep upon them. Within the memory of the present generation, a single stalk[87] is all that has ever been found there, and that was sent as a curiosity to the Emperor Nero. If it so happen that one of the flock, while grazing, meets with a growing shoot[88] of it, the fact is easily ascertained by the following signs; the sheep, after eating of it, immediately falls asleep, while the goat is seized with a fit of sneezing.[89] For this long time past, there has been no other laser imported into this country, but that produced in either Persis, Media, or Armenia, where it grows in considerable abundance, though much inferior[90] to that of Cyrenaica; and even then it is extensively adulterated with gum, sacopenium,[91] or pounded beans. I ought the less then to

reject the more general opinion that it is identical with the Ferula asafœtida. Pliny has probably caused some confusion by blending the description of other writers with that given by Theophrastus, each having in view a different plant. Indeed, whatever the Laserpitium or Silphium of other countries may have been, it is not improbable that the odoriferous plant of Cyrenaica was not identical with the Ferula asafœtida of Linnæus. The foliage of the Thapsia silphium is exactly similar to that of the Laserpitium as depicted on medals of Cyrenaica, still extant. We learn from Littré, that Dr. Guyon showed, in 1842, to the Académie des Sciences, a plant which the Arabs of Algeria employ as a purgative, and which they call *bonnefa*. It is the Thapsia Garganica of Desfontaines, and is considered by Guyon to be identical with the Silphium of the ancients.

[86] See B. xxii. c. 48. In the "Rudens" of Plautus, the scene of which is near Cyrene, frequent allusion is made to the growth of laserpitium there, and the preparation and export of the resin, as forming the staple article of commerce.

[87] Scribonius Largus, who lived in the time of Tiberius, speaks of using in a prescription laser of Cyrenaica, "if it can be met with;" "si poterit inveniri."

[88] "In spem nascentis."

[89] Fée remarks that Pliny has not found this absurd story in any of the works from which he has compiled his account, but that it is entirely his own.

[90] This was probably the Ferula asafœtida of Linnæus.

[91] See B. xx. c. 75.

omit the facts, that in the consulship[92] of C. Valerius and M. Herennius, there was brought to Rome, from Cyrenæ, for the public service, thirty pounds' weight of laserpitium, and that the Dictator Cæsar, at the beginning of the Civil War, took from out of the public treasury, besides gold and silver, no less than fifteen hundred pounds of laserpitium.

We find it stated by the most trustworthy among the Greek writers,[93] that this plant first made its appearance in the vicinity of the gardens of the Hesperides and the Greater Syrtis, immediately after the earth had been soaked on a sudden by a shower as black as pitch. This took place seven years before the foundation of the city of Cyrenæ, and in the year of Rome 143. The virtues of this remarkable fall of rain extended, it is said, over no less than four thousand stadia of the African territory; and upon this soil laserpitium began universally to grow, a plant that is in general wild and stubborn, and which, if attempted to be cultivated, will leave the spot where it has been sown quite desolate and barren. The roots of it are numerous and thick, the stalk being like that of fennel-giant, and of similar thickness. The leaves of this plant were known as "maspetum," and bore a considerable resemblance to parsley; the seeds of it were foliaceous, and the plant shed its leaves every year. They used to feed the cattle there upon it; at first it purged them, but afterwards they would grow fat, the flesh being improved in flavour in a most surprising degree. After the fall of the leaf, the people themselves were in the habit of eating[94] the stalk, either roasted or boiled: from the drastic effects of this diet the body was purged for the first forty days, all vicious humours being effectually removed.[95]

The juices of this plant were collected two different ways, either from the root or from the stalk; in consequence of which these two varieties of the juice were known by the distinguishing names of "rhizias" and "caulias,"[96] the last being of inferior quality to the other, and very apt to turn putrid. Upon

[92] A.U.C. 661.

[93] Fée remarks, that if Pliny here alludes to Theophrastus, Hist. Plant. B. vi. c. 3, he has mistaken his meaning.

[94] This, as Fée says, could hardly apply to the Ferula asafœtida of Linnæus, the stalk of it being extremely acrid, and the juice fetid in the highest degree.

[95] "Vitia his omnibus." The reading here is probably corrupt.

[96] "Root-juice," and "stalk-juice."

the root there was a black bark, which was extensively employed for the purposes of adulteration. The juice of the plant was received in vessels, and mixed there with a layer of bran; after which, from time to time it was shaken, till it had reached a proper state of maturity; indeed, if this precaution was neglected, it was apt to turn putrid. The signs that it had come to maturity were its colour, its dryness, and the absorption of all humidity.

There are some authors, however, who state that the root of laserpitium was more than a cubit in length, and that it presented a tuberosity above the surface of the earth. An incision, they say, was made in this tuberosity, from which a juice would flow, like milk in appearance; above the tuberosity grew a stalk, to which they give the name of "magydaris;"[97] the leaves that grew upon this stalk were of the colour of gold, and, falling at the rising of the Dog-star, when the south winds begin to prevail, they acted as seed for the purposes of reproduction. It was from these leaves, too, they say, that laserpitium[98] was produced, the root and the stalk attaining their full growth in the space of one year. The same writers also state, that it was the practice to turn up the ground about the plant, and that it had no such effect as purging the cattle that were fed upon it; though one result of using it as food was, that such cattle as were ailing were either cured of their distempers, or else died immediately upon eating of it, a thing, however, that but rarely happened. The first description, however, is found to agree more nearly with the silphium that comes from Persis.

CHAP. 16.—MAGYDARIS.

There is another[99] variety of this plant, known as "magydaris,"[1] of a more delicate nature, less active in its effects, and destitute of juice. It grows in the countries adjacent to Syria,[2] but is not to be found in the regions of Cyrenaica. There

[97] Poinsinet fancies that this name means "staff of the Magi."

[98] Or "laser," these names being indifferently applied to the gum-resin.

[99] The whole of this paragraph has been borrowed from Theophrastus, Hist. Plant. B. vi. c. iii.

[1] Sprengel takes this to be the Laserpitium ferulaceum of Linnæus, but Fée thinks it is more than doubtful if the identity can be established.

[2] From Theophrastus. Dioscorides says, on the other hand, that it grows in Libya.

grows also upon Mount Parnassus,[2*] in great abundance, a plant to which some persons give the name of "laserpitium:" by means of all these varieties, adulterations are effected of a production that is held in the highest esteem for its salutary qualities and its general usefulness. The chief proofs of its genuineness consist in its colour, which ought to be slightly red without, and when broken quite white and transparent within; the drops of it, too, should melt very rapidly on the application of spittle. It is extensively employed for medicinal purposes.[3]

CHAP. 17.—MADDER.

There are two other plants also, which are but little known to any but the herd of the sordid and avaricious, and this because of the large profits that are derived from them. The first of these is madder,[4] the employment of which is necessary in dyeing wool and leather. The madder of Italy is the most esteemed, and that more particularly which is grown in the suburbs of the City; nearly all our provinces, too, produce it in great abundance.[5] It grows spontaneously, but is capable of reproduction by sowing, much after the same manner as the fitch. The stem,[6] however, is prickly, and articulated, with five leaves arranged round each joint: the seed is red. Its medicinal properties we shall have occasion to mention in the appropriate place.[7]

CHAP. 18.—THE RADICULA.

The plant known to us by the name of "radicula,"[8] is the

[2*] From Littré we learn that M. Fraas has suggested that the Magydaris and Laserpitium are possibly the Ferula Tingitana, and the Ptychotis verticillata of Decandolle, which last he has found upon high mountains in the lower region of pines, on Mount Parnassus, among others.

[3] See B. xxii. cc. 48, 49.

[4] The Rubia tinctorum of Linnæus.

[5] Dioscorides speaks of the madder of Ravenna as being the most esteemed. It is much cultivated at the present day in the South of France, Holland, and the Levant. That of Lille enjoys a high reputation.

[6] It is covered with bristly hairs, or, rather, fine, hooked teeth. There is, however, no resemblance whatever between it and ervilia or orobus, the fitch.

[7] B. xxiv. c. 56.

[8] Or "little root;" though, in reality, as Pliny says, it had a large root. Some writers have supposed, that by this name is meant the Reseda luteola of Linnæus, the "dyer's weed" of the moderns; but neither

second of these productions. It furnishes a juice that is extensively employed in washing wool, and it is quite wonderful how greatly it contributes to the whiteness and softness of wool. It may be produced anywhere by cultivation, but that which grows spontaneously in Asia and Syria,[9] upon rugged, rocky sites, is more highly esteemed. That, however, which is found beyond the Euphrates has the highest repute of all. The stalk of it is ferulaceous[10] and thin, and is sought by the inhabitants of those countries as an article of food. It is employed also for making unguents, being boiled up with the other ingredients, whatever they may happen to be. In leaf it strongly resembles the olive. The Greeks have given it the name of "struthion." It blossoms in summer, and is agreeable to the sight, but entirely destitute of smell. It is somewhat thorny, and has a stalk covered with down. It has an extremely diminutive seed, and a large root, which is cut up and employed for the purposes already mentioned.

CHAP. 19. (4.)—THE PLEASURES OF THE GARDEN.

Having made mention of these productions, it now remains for us to return to the cultivation of the garden,[11] a subject recommended by its own intrinsic merits to our notice: for we find that in remote antiquity, even, there was nothing looked upon with a greater degree of admiration than the gardens of the Hesperides,[11*] those of the kings Adonis[12] and Alci-

Pliny nor any of the Greek writers mention the Radicula as being used for dyeing. Some, again, identify it with the Gypsophila struthium of Linnæus, without sufficient warranty, however, as Fée thinks.

[9] The Gypsophila struthium grows in Spain, and possibly, Fée says, in other countries. Linnæus has "pretended," he says, that the Spaniards still employ the root and stalk of the Gypsophila for the same purposes as the ancients did the same parts of the Radicula. He himself, however, though long resident in Spain, had never observed such to be the fact.

[10] This description, Fée says, does not correspond with that of the Gypsophila struthium, the stalk of which does not at all resemble that of the ferulaceous plants, and the leaf is quite different in appearance from that of the olive.

[11] As Fée observes, by the word "hortus" the Romans understood solely the "vegetable" or "kitchen-garden;" the pleasure garden being generally denominated "horti." [11*] See B. v. c. 1.

[12] A fabulous king of Phœnicia, probably, whose story was afterwards transferred, with considerable embellishments, to the Grecian mythology. Adonis is supposed to have been identical with the Thammuz of Scripture,

noüs,[13] and the Hanging Gardens, whether they were the work of Semiramis, or whether of Cyrus, king of Assyria, a subject of which we shall have to speak in another work.[14] The kings of Rome cultivated their gardens with their own hands; indeed, it was from his garden that Tarquinius Superbus[15] sent to his son that cruel and sanguinary message of his. In our laws of the Twelve Tables, we find the word "villa," or "farm," nowhere mentioned; it is the word "hortus" that is always used with that signification, while the term "heredium" we find employed for "garden."

There are certain religious impressions, too, that have been attached to this species of property,[16] and we find that it is in the garden and the Forum only that statues of satyrs are consecrated, as a protection against the evil effects[17] of spells and sorcery; although in Plautus, we find the gardens spoken of as being under the tutelage of Venus. At the present day, under the general name of gardens,[18] we have pleasure-grounds situate in the very heart of the City, as well as extensive fields and villas.

Epicurus, that connoisseur[19] in the enjoyments of a life of ease, was the first to lay out a garden at Athens;[20] up to his time it had never been thought of, to dwell in the country in the middle of the town. At Rome, on the other hand, the garden[21] constituted of itself the poor man's field, and it was from the garden that the lower classes procured their daily food—an aliment how guiltlessly obtained! But still, it is a great deal better, no doubt,[22] to dive into the abysses of the

mentioned by Ezekiel, viii. 14, where he speaks of the "women weeping for Thammuz." Hardouin considers him to have been a Syrian deity, identical with the Moon.

[13] Celebrated by Homer, Od. B. vi. and xiii.

[14] "Alio volumine." As no further mention is made by Pliny of the Hanging Gardens of Babylon, it is most probable that he contemplated giving a description of them in another work, an intention which he did not live to realize.

[15] See further on this subject, c. 53 of the present Book.

[16] The reading, "quam rem," seems preferable to "quam ob rem," adopted by Sillig.

[17] "Effascinationes." The effects of the evil eye.

[18] "Hortorum." "Pleasure-gardens."

[19] "Otii magister."

[20] For the purpose of teaching philosophy there.

[21] "Hortus." The "kitchen-garden."

[22] Ironically said.

deep, and to seek each kind of oyster at the risk and peril of shipwreck, to go searching for birds beyond the river Phasis[23] even, which, protected as they are by the terrors invented by fable,[24] are only rendered all the more precious thereby—to go searching for others, again, in Numidia,[25] and the very sepulchres of Æthiopia,[26] or else to be battling with wild beasts, and to get eaten one's self while trying to take a prey which another person is to eat! And yet, by Hercules! how little do the productions of the garden cost us in comparison with these! How more than sufficient for every wish and for every want!—were it not, indeed, that here, as in every thing else, turn which way we will, we find the same grounds for our wrath and indignation. We really might be content to allow of fruits being grown of the most exquisite quality, remarkable, some of them for their flavour, some for their size, some, again, for the monstrosities of their growth, morsels all of them forbidden to the poor![27] We might allow of wines being kept till they are mellowed with age, or enfeebled by being passed through[28] cloth strainers, of men, too, however prolonged their lives, never drinking any but a wine that is still older than themselves! We might allow of luxury devising how best to extract the very aroma, as it were, and marrow[29] only from grain; of people, too, living upon nothing but the choicest productions of the confectioner, and upon pastes fashioned in fantastic shapes: of one kind of bread being prepared for the rich, and another for the multitude; of the yearly produce of the field being classified in a descending scale, till it reaches the humble means of the very lowest classes—but do we not find that these refined distinctions have been extended to the very herbs even, and that riches have contrived to establish points of dissimilarity in articles of food which ordinarily sell for a single copper coin?[30]

In this department even, humble as it is, we are still des-

[23] He alludes to the pheasant. See B. x. c. 67.

[24] He alludes to Colchis, the country of Medea, the scene of the exploits of Jason and the Argonauts, and the land of prodigies and fable.

[25] See B. x. cc. 38 and 67. He alludes to "meleagrides," or Guinea-fowls.

[26] See B. x. c. 37. He alludes to the birds called "Memnonides."

[27] See B. xvii. c. 1.

[28] See B. xiv. c. 28.

[29] He alludes to the finest and most delicate kinds of wheaten flour. See B. xviii. c. 29.

[30] "Uno asse."

tined to find certain productions that are denied to the community at large, and the very cabbages pampered to such an enormous extent that the poor man's table is not large enough to hold them. Asparagus, by Nature, was intended to grow wild,[31] so that each might gather it where he pleased—but, lo and behold! we find it in the highest state of cultivation, and Ravenna produces heads that weigh as much as three pounds[32] even! Alas for the monstrous excess of gluttony! It would be surprising indeed, for the beasts of the field to be forbidden the thistle for food, and yet it is a thing forbidden[33] to the lower classes of the community! These refined distinctions, too, are extended to the very water even, and, thanks to the mighty influence of money, there are lines of demarcation drawn in the very elements themselves. Some persons are for drinking ice, others for quaffing snow, and thus is the curse of the mountain steep turned into an appetizing stimulus for the palate![34] Cold is carefully treasured up for the summer heats, and man's invention is racked how best to keep snow freezing in months that are not its own. Some again there are who first boil the water,[35] and then bring it to the temperature of winter—indeed, there is nothing that pleases man in the fashion in which Nature originally made it.

And is it the fact, then, that any herb of the garden is reared only for the rich man's table? It is so—but still let no one of the angered populace think of a fresh secession to Mount Sacer or Mount Aventine; for to a certainty, in the long run, all-powerful money will bring them back to just the same position as they were in when it wrought the severance. For, by Hercules![36] there was not an impost levied at Rome

[31] As "corruda," or "wild asparagus." The Brassica capitata alba of C. Bauhin, or white cabbage, sometimes attains a weight of ten or twelve pounds.

[32] This is an exaggeration, probably.

[33] He alludes to the artichoke, or Cinara cardunculus of the botanists, which bears some resemblance to the common thistle.

[34] Martial and Aulus Gellius speak of ice and snow drinks. The latter must have been very injurious to the stomach.

[35] See B. xxxi. c. 23.

[36] In this corrupt and otherwise unintelligible passage, we have adopted the proposed emendations of Sillig, who is of opinion that it bears reference to the abolition of the market-dues, or "portorium," by Augustus Cæsar, and the substitution of a property tax of one twentieth of the land, a method of taxation which inflicted greater hardships than the former one, as it was assessed according to the *superficies*, not the *produce*

more grievous than the market-dues, an impost that aroused the indignation of the populace, who repeatedly appealed with loud clamours to all the chief men of the state to be relieved from it. At last they were relieved from this heavy tax upon their wares; and then it was found that there was no tax more lucrative, more readily collected, or less obnoxious to the caprices of chance, than the impost that was levied in exchange for it, in the shape of a property-tax, extended to the poorest classes: for now the very soil itself is their surety that paid the tax will be, their means are patent to the light of day, and the superficial extent of their possessions, whatever the weather may chance to be, always remains the same.

Cato,[37] we find, speaks in high praise of garden cabbages:—indeed, it was according to their respective methods of garden cultivation that the agriculturists of early times were appreciated, and it was immediately concluded that it was a sign of a woman being a bad and careless manager of her family, when the kitchen-garden—for this was looked upon as the woman's department more particularly—was negligently cultivated; as in such case her only resource was, of course, the shambles or the herb-market. But cabbages were not held in such high esteem in those days as now: indeed, all dishes were held in disrepute which required something else to help them down, the great object being to economize oil as much as possible; and as to the flesh-market, so much as a wish even to taste its wares was visited with censure and reproach. The chief thing that made them so fond of the garden was the fact that its produce needs no fire and ensures economy in fuel, and that it offers resources which are always ready and at hand. These articles of food, which from their peculiar nature we call "vinegar-diets,"[38] were found to be easy of digestion, by no means apt to blunt and overload the senses, and to create but little craving for bread as an accompaniment. A portion of them which is still used by us for seasonings, attests that our forefathers used

of the land. His proposed emendations of the text are as follows: "mox enim certe æquabit *eos pecunia* quos pecunia separaverit. Itaque ——— ac minore fortunæ jure, *quam* cum *hereditate datur* pensio ea pauperum; *his* in solo sponsor est," &c.

[37] De Re Rust. cc. 156, 157. He speaks of it as being eaten either boiled or raw, but in the latter case with vinegar. Fée thinks that even then it would make a very acrid and indigestible diet.

[38] "Acetaria." Salads.

only to look at home for their resources, and that no Indian peppers were in request with them, or any of those other condiments which we are in the habit of seeking beyond the seas. In former times the lower classes of Rome, with their mimic gardens in their windows, day after day presented the reflex of the country to the eye, when as yet the multitudes of atrocious burglaries, almost innumerable, had not compelled us to shut out all such sights with bars to the passers by.

Let the garden, then, have its due meed of honour, and let not things, because they are common, enjoy for that the less share of our consideration—and the more so, as we find that from it men of the very highest rank have been content to borrow their surnames even; thus in the Valerian family, for instance, the Lactucini have not thought themselves disgraced by taking their name from the lettuce. Perhaps, too, our labours and research may contribute some slight recommendation to this our subject; although, with Virgil,[39] we are ready to admit how difficult it is, by language however elevated, to ennoble a subject that is so humble in itself.

CHAP. 20.—THE LAYING OUT OF GARDEN GROUND.

There is no doubt that the proper plan is, to have the gardens adjoining the country-house; and they should be watered, more particularly, by a river running in front of it, if possible; or else with water drawn from a well by the aid of a wheel or of pumps, or by swipes.[40] The ground should be opened just as the west winds are beginning to prevail; fourteen days after which it should be got ready for autumn, and then before the winter solstice it should have another turning up. It will require eight men to dig a jugerum, manure being mixed with the earth to a depth of three feet: the ground, too, should be divided into plots or beds with raised and rounded edges, each of which should have a path dug round it, by means of which access may be afforded to the gardener and a channel formed for the water needed for irrigation.

[39] He alludes, no doubt, to the words of Virgil, in Georg. iv. l. 6.

"In tenui labor, at tenuis non gloria———"

though in that instance the poet is speaking of bees.

[40] "Tollenonum haustu." These would be used in the case of well-water; they are still to be seen occasionally in this country, and are very common on the continent. The wheel is also used for drawing well-water, and is frequently employed in Barbary and Spain.

CHAP. 21.—PLANTS OTHER THAN GRAIN AND SHRUBS.

Among the garden plants there are some that recommend themselves by their bulbs, others by the head, others by the stalk, others by the leaf, others by both: some, again, are valued for their seed, others for the outer coat, others for their membranous tissues, others for their cartilaginous substance, others for the firmness of their flesh, and others for the fleshy tunics in which they are enveloped.

CHAP. 22.—THE NATURAL HISTORY OF TWENTY DIFFERENT KINDS OF PLANTS WHICH GROW IN GARDENS—THE PROPER METHODS TO BE FOLLOWED IN SOWING THEM RESPECTIVELY.

Of some plants the fruits[41] are in the earth, of others both in the earth and out of it, and of others, again, out of the earth solely. Some of them increase as they lie upon the ground, gourds and cucumbers, for instance; the same products will grow also in a hanging position, but they are much heavier even then than any of the fruits that grow upon trees. The cucumber, however, is composed of cartilage and a fleshy substance, while the gourd consists of rind and cartilage: this last is the only vegetable production the outer coat of which becomes of a ligneous nature, when ripe. Radishes, turnips, and rape are hidden in the earth, and so, too, are elecampane,[41*] skirrets,[42] and parsnips,[43] though in a different manner. There are some plants, again, to which we shall give the name of "ferulaceous," anise[44] and mallows, for instance; indeed, we find it stated by some writers that in Arabia[45] the mallow be-

[41] By the word "fructus" he no doubt means the edible parts solely, the leaf, stalk, or root, as the case may be.

[41*] Fée is surprised to find elecampane figuring among the garden vegetables. It has a powerful odour, is bitter, and promotes expectoration. Though not used as a vegetable it is still used as a preserve, or sweetmeat, mixed with sugar. See further on it in c. 29 of this Book.

[42] See c. 28 of this Book. [43] See c. 27 of this Book.

[44] Fée remarks that this juxtaposition of anise and mallows betokens the most complete ignorance of botany on the part of our author; there being few plants which differ more essentially. The field-mallow, or Malva silvestris of Linnæus, or perhaps several varieties of it, are here referred to. The anise will be further mentioned in c. 74 of this Book.

[45] Fée suggests that the plant here mentioned may have been an annual, probably the Lavatorea arborea of botanists, or some kindred species. In a few months it is known to attain a height of ten feet or more.

comes arborescent at the sixth month, so much so, in fact, as to admit of its being used for walking-sticks. We have another instance, again, in the mallow-tree of Mauretania, which is found at Lixus, a city built upon an æstuary there; and at which spot, it is said, were formerly the gardens of the Hesperides, at a distance of two hundred paces from the Ocean, near the shrine of Hercules, more ancient, tradition says, than the temple at Gades. This mallow-tree[46] is twenty feet in height, and of such a thickness that there is not a person in existence who is able with his arms to span its girth.

In the class of ferulaceous plants we must include hemp[47] also. There are some plants, again, to which we must give the appellation of "fleshy;"[48] such as those spongy[49] productions which are found growing in damp meadows. As to the fungus, with a hard, tough flesh, we have already[50] made mention of it when speaking of wood and trees; and of truffles, which form another variety, we have but very recently given a description.[51]

CHAP. 23. (5.)—VEGETABLES OF A CARTILAGINOUS NATURE—CUCUMBERS. PEPONES.

The cucumber[52] belongs to the cartilaginous class of plants, and grows above the ground. It was a wonderful favourite with the Emperor Tiberius, and, indeed, he was never without it; for he had raised beds made in frames upon wheels, by means of which the cucumbers were moved and exposed to the full heat of the sun; while, in winter, they were withdrawn, and placed under the protection of frames glazed with mirror-stone.[53] We find it stated, also, by the ancient Greek writers,

[46] In Fée's opinion this tree cannot have belonged to the family of Malvaceæ; the Adansonia and some other exotics of the family, with which Pliny undoubtedly was not acquainted, being the only ones that attain these gigantic proportions.

[47] There is no resemblance between mallows and hemp, any more than there is between mallows and anise.

[48] "Carnosa."

[49] Hardouin thinks that he alludes to the Conferva, or river sponge, again mentioned in B. xxvii. c. 45. Fée, however, dissents from that opinion.

[50] In B. xvi. cc. 11 and 13, and in cc. 12 and 14 of the present Book.

[51] In c. 11 of the present Book.

[52] The Cucumis sativus of Linnæus.

[53] "Lapis specularis." See B. xxxvi. c. 45. Columella, De Re Rust. B. xi. c. 3, speaks of this mode of ripening cucumber, and the fondness of the Emperor Tiberius for them.

that the cucumber ought to be propagated from seed that has been steeped[54] a couple of days in milk and honey, this method having the effect of rendering them all the sweeter to the taste. The cucumber, while growing, may be trained to take any form that may be wished: in Italy the cucumbers are green[55] and very small, while those grown in some of the provinces are remarkably large, and of a wax colour or black.[56] Those of Africa, which are also remarkably prolific, are held in high esteem; the same, too, with the cucumbers of Mœsia, which are by far the largest of all. When the cucumber acquires a very considerable volume, it is known to us as the "pepo."[57] Cucumbers when eaten remain on the stomach till the following day, and are very difficult[58] of digestion; still, for all that, in general they are not considered very unwholesome. By nature they have a wonderful hatred to oil, and no less affection for water, and this after they have been cut from the stem even.[59] If water is within a moderate distance of them, they will creep towards it, while from oil, on the other hand, they will shrink away: if any obstacle, too, should happen to arrest their progress, or if they are left to hang, they will grow curved and crooked. Of these facts we may be satisfactorily convinced in a single night even, for if a vessel filled with water is placed at four fingers' distance from a cucumber, it will be found to have descended to it by the following morning; but if the same is done with oil, it will have assumed the curved form of a hook by the next day. If hung in a tube while in blossom, the cucumber will grow to a most surprising

[54] Theophrastus and Columella say the same of the cucumber, and Palladius of the melon, but there is no ground, probably, for the belief. In very recent times, however, Fée says, it was the usage to steep the seeds of the melon in milk. This liquid, in common with any other, would have the effect of softening the exterior integuments, and thereby facilitating the germination, but no more.

[55] Still known as the "green" or "gherkin" cucumber, and much used, when young, for pickling.

[56] Probably in the sense of a very dark green, for *black* cucumbers are a thing unheard of.

[57] He is evidently speaking of the pompion, or pumpkin, the Cucurbita pepo of Linnæus: quite distinct from the cucumber.

[58] Cucumbers are not difficult of digestion to the extent that Pliny would have us to believe.

[59] As Fée says, it is a loss of time to combat such absurd prejudices as these.

length.[60] It is only of late, too, that a cucumber of entirely new shape has been produced in Campania, it having just the form of a quince.[61] It was quite by accident, I am told, that the first one acquired this shape in growing, and it was from the seed of this that all the others have been reproduced. The name given to this variety is "melopepo." These last do not grow hanging, but assume their round shape as they lie on the ground. A thing that is very remarkable in them, in addition to their shape, colour, and smell, is the fact that, when ripe, although they do not hang from the stem, they separate from it at the stalk.

Columella[62] has given us a plan of his, by which we may have cucumbers the whole year round: the largest bramble-bush that can be procured is transplanted to a warm, sunny spot, and then cut down, about the time of the vernal equinox, to within a couple of fingers of the ground; a cucumber-seed is then inserted in the pith of the bramble, and the roots are well moulded up with fine earth and manure, to withstand the cold. According to the Greeks, there are three kinds of cucumbers, the Laconian, the Scytalic, and the Bœotian,[63] the Laconian being the only one among them that is fond[64] of the water.

There are some persons who recommend steeping the seed of the cucumber in the juice of the herb known as the "culix;"[65] the produce, they say, will be sure to grow without seeds.

CHAP. 24.—GOURDS.

Gourds resemble the cucumber in nature, at least in their manner of growing; they manifest an equal aversion to the winter, too, while they require constant watering and manure.

[60] This is conformable with modern experience.

[61] Fée says that this is the melon, the Cucumis melo of Linnæus.

[62] B. xi. c. 3. Columella professes to borrow it from the people of Mendes in Egypt.

[63] Theophrastus enumerates these varieties, Hist. Plant. B. vii. c. 4.

[64] Theophrastus only says that the Laconian cucumber thrives better with watering than the others.

[65] It is impossible to identify this plant, as no ancient writer has given any description of it: it has been suggested, however, that it may have been the Plantago Psyllium, or else the Inula pulicaria of Linnæus. Of course there is no truth in the story here told of the effects of its juice upon the cucumber.

Both cucumbers and gourds are sown in holes a foot and a half[66] deep, between the vernal equinox and the summer solstice, at the time of the Parilia[67] more particularly. Some persons, however, think it better to sow gourds after the calends of March,[68] and cucumbers after the nones,[69] and at the time of the Quinquatria.[70] The cucumber and the gourd climb upwards in a precisely similar manner, their shoots creeping along the rough surface of the walls, even to the very roof, so great is their fondness for elevated spots. They have not sufficient strength, however, to support themselves without the aid of stays. Shooting upwards with the greatest rapidity, they soon cover with their light shade the arched roofs of the houses and the trellises on which they are trained. From this circumstance it is that we find the gourd classified into two primary kinds, the roof-gourd,[71] and the common gourd, which creeps upon the ground. In the first kind, from a stalk of remarkable thinness is suspended a fruit of considerable weight and volume, and quite immoveable by the action of the wind. The gourd, too, as well as the cucumber, admits of being lengthened to any extent, by the aid of osier tubes more particularly. Just after the blossom has fallen off, the plant is introduced into these tubes, and as it grows it can be made to assume any form that may be wished, that of a serpent coiled up being the one that is mostly preferred; if left at liberty to grow as it hangs, it has been known before now to attain to no less than [72] nine feet in length.

The cucumber flowers gradually, blossom succeeding blossom; and it adapts itself perfectly well to a dry soil. It is

[66] This depth would probably have the effect of retarding, or else utterly impeding, the growth of the plant.

[67] See c. 44 of this Book. The Parilia was a festival celebrated on the nineteenth of April, the anniversary of the foundation of Rome.

[68] First of March. [69] Seventh of March.

[70] See B. xviii. c. 56.

[71] The "camerarium," and the "plebeium." The former, Fée thinks, is the Cucurbita longior of Dodonæus and J. Bauhin, the long gourd, and other varieties probably of the calabash gourd, the Cucurbita leucantha of Duchesne. The latter is probably the Cucurbita pepo and its varieties. Fée thinks that the name "cucurbita," as employed by Pliny, extends not only to the gourd, but the citrul or small pumpkin as well.

[72] As Fée says, he must be speaking of the fruit here, and not the plant, which attains a far greater length than nine feet.

covered with a white down, which increases in quantity as the plant gains in size.

The gourd admits of being applied to more numerous uses than the cucumber even: the stem is used as an article of food[73] when young, bnt at a later period it changes its nature, and its qualities become totally different: of late, gourds have come to be used in baths for jugs and pitchers, but for this long time past they have been employed as casks[74] for keeping wine. The rind is tender while the fruit is green, but still it is always scraped off when the gourd is used for food. It admits of being eaten several ways, and forms a light and wholesome aliment, and this although it is one of those fruits that are difficult of digestion by the human stomach, and are apt to swell out those who eat of them. The seeds which lie nearest to the neck of the gourd produce fruit of remarkable[75] length, and so do those which lie at the lower extremities, though not at all comparable with the others. Those, on the other hand, which lie in the middle, produce gourds of a round shape, and those on the sides fruit that are thick and short. The seeds are dried by being placed in the shade, and when wanted for sowing, are steeped in water first. The longer and thinner the gourd is, the more agreeable it is to the palate, and hence it is that those which have been left to grow hanging are reckoned the most wholesome: these, too, have fewer seeds than the others, the hardness of which is apt to render the fruit less agreeable for eating.

Those which are intended for keeping seed, are usually not cut before the winter sets in; they are then dried in the smoke, and are extensively employed for preserving[76] garden seeds, and for making other articles for domestic use. There has been a method discovered, also, of preserving the gourd for table, and the cucumber as well, till nearly the time when the next year's crop is ripe; this is done by putting them in brine. We are assured, too, that if put in a hole dug in a place well shaded

[73] The young shoots of the gourd, Fée says, would afford an insipid food, with but little nutriment.

[74] The varieties thus employed, Fée says, must have been the Cucurbita lagenaria of Linnæus, and the Cucurbita latior of Dodonæus.

[75] This is not the fact. The seed produces fruit similar to that from which it was taken, and no more.

[76] The trumpet gourd, the Cucurbita longior of Dodonæus, is still employed, Fée says, by gardeners for this purpose.

from the sun, with a layer of sand beneath, and dry hay and earth on the top of them, they may be kept green for a very long time. We also find wild[77] cucumbers and gourds; and, indeed, the same is the case with pretty nearly all the garden plants. These wild varieties, however, are only possessed of certain medicinal properties, and for this reason we shall defer any further mention of them till we come to the Books appropriated to that subject.

CHAP. 25.—RAPE. TURNIPS.

The other plants that are of a cartilaginous nature are concealed, all of them, in the earth. In the number of these is the rape, a subject upon which it would almost appear that we have treated[78] at sufficient length already, were it not that we think it as well to observe, that medical men call those which are round "male,"[79] while those which are larger and more elongated, are known to them as "female" rape: these last are superior in sweetness, and better for keeping, but by successive sowings they are changed into male rape.[80]

The same authors, too, have distinguished five different varieties of the turnip:[81] the Corinthian, the Cleonæan, the Liothasian, the Bœotian, and the one which they have characterized as peculiarly the "green" turnip. The Corinthian turnip[82] grows to a very large size, and the root is all but out of the ground; indeed, this is the only kind that, in growing, shoots upwards, and not as the others do, downwards into the ground. The Liothasian is known by some persons as the Thracian turnip;[83] it is the one that stands extreme cold the best of all. Next to it, the Bœotian kind is the sweetest; it is remarkable, also, for the roundness of its shape and its shortness;

[77] See B. xx. c. 2.

[78] In B. xviii. c. 34.

[79] Though borrowed from Theophrastus and the Greek school, this distinction is absurd and unfounded.

[80] It is not the fact that the seed of the round kind, after repeated sowings, will produce long roots. Pliny, however, has probably miscopied Theophrastus, who says, Hist. Plant. B. vii. c. 4, that this transformation takes place when the seed is sown very thick. This assertion, however, is no more founded on truth than that of Pliny.

[81] Also from Theophrastus, B. vii. c. 4; though that author is speaking of radishes, *ραφανίδες*, and not turnips.

[82] Properly *radish*.

[83] Properly *radish*.

while the Cleonæan turnip,[84] on the other hand, is of an elongated form. Those, in general, which have a thin, smooth leaf, are the sweetest; while those, again, the leaf of which is rough, angular, and prickly, have a pungent taste. There is a kind of wild turnip,[85] also, the leaves of which resemble those of rocket.[86] At Rome, the highest rank is given to the turnips of Amiternum,[87] and those of Nursia; after them, those grown in the neighbourhood of the City[88] are held in the next degree of esteem. The other particulars connected with the sowing of the turnip have been already mentioned[89] by us when speaking of the rape.

CHAP. 26.—RADISHES.

Radishes are composed of an outer coat and a cartilaginous substance, and in many instances the rind is found to be thicker than the bark of some trees. This plant is remarkable for its pungency, which increases in proportion to the thickness of the rind: in some cases, too, the surface of it assumes a ligneous nature. Radishes are flatulent[90] to a remarkable degree, and are productive of eructations; hence it is that they are looked upon as an aliment only fit for low-bred people,[91] and this more particularly if coleworts are eaten directly after them. If, on the other hand, they are eaten with green olives, the eructations produced are not so frequent, and less offensive. In Egypt the radish is held in very high esteem, on account of the abundance of oil[92] that is extracted from the seed. In-

[84] Radish.

[85] Properly *radish*.

[86] See B. xx. c. 49. Fée queries whether this radish may not be the Raphanus raphanistrum of botanists. See B. xviii. c. 34.

[87] See B. xviii. c. 35.

[88] "Nostratibus." Poinsinet would render this, "Those of my native country," *i. e.* the parts beyond the Padus. As Pliny resided at Rome during the latter part of his life, there can be little doubt but that he alludes to the vicinity of Rome.

[89] See B. xviii. c. 34.

[90] This property extends to most of the Cruciferæ.

[91] "Cibus illiberalis."

[92] The variety Oleifera of the Raphanus sativus is still cultivated extensively in Egypt and Nubia for the extraction of the oil. The variety Oleifera of the Brassica napus is also greatly cultivated in Egypt. Fée suggests that Pliny may possibly confound these two plants under the one name of "raphanus." It is worthy of remark, too, that the Colza oil, so much used in France and Belgium for burning in lamps, is expressed from the seed of the Brassica oleracea, a species of cabbage.

deed, the people of that country sow this plant in preference to any other, whenever they can get the opportunity, the profits derived from it being larger than those obtained from the cultivation of corn, and the imposts levied upon it considerably less: there is no grain known that yields a larger quantity of oil.

The Greeks have distinguished the radish[93] into three different kinds, according to the characteristic features of the leaves, there being the crisped leaf, the smooth leaf, and the wild radish, the leaf of which is smooth, but shorter than that of the others; it is round also, grows in great abundance, and spreads like a shrub. The taste of this last variety is acrid, and it acts medicinally as a strong purgative. In the first kind, again, there are certain differences, determined by the seed, for in some varieties the seed is of an inferior quality, and in others remarkably small: these defects, however, are only found to exist in the kind that has the crisped leaf.

Our own people, again, have found other varieties of the radish: there is the Algidan[94] radish, long and transparent, so called from the place of its growth: another, similar to the rape in form, is known as the Syrian radish; it is pretty nearly the mildest and the most tender of them all, and is well able to bear the winter. The very best of all, however, is the one that has been brought from Syria, very recently it would seem, as we do not find it mentioned by any of our writers: it lasts the whole of the winter through. In addition to these kinds, there is another, a wild variety, known by the Greeks as "agrion,"[95] and to the people of Pontus as "armon," while others, again, call it "leuce,[96] and our people "armoracia;"[97] it has more leaves, however, than root.

In testing the quality of the radish, it is the stem more par-

[93] The Raphanus sativus of Linnæus. This passage, however, down to "crisped leaf," properly applies to the cabbage, and not the radish, Pliny having copied the Greek, and taken the word ῥάφανος, properly "cabbage," to mean "radish;" which in the later Greek writers it sometimes does, though not in this instance.

[94] Mount Algidus was near Tusculum, fifteen miles from Rome. Its coldness contributed greatly to the goodness of its radishes.

[95] Or "wild." Fée suggests that this is the Raphanus rusticanus of Lobellius, the Cochlearia Armoracia of Linnæus, the wild radish, or horse-radish.

[96] Or "white." From the extreme whiteness of the roots.

[97] Probably meaning, "radish of Armorica."

ticularly, that is looked at; in those which are acrid to the taste, for instance, it is rounder and thicker than in the others, and grooved with long channels, while the leaves are more unsightly to the eye, being angular and covered with prickles.

The radish requires to be sown in a loose, humid soil, has a great aversion to manure, and is content with a dressing solely of chaff: so fond is it of the cold, that in Germany it is known to grow as large as an infant in size.[98] For the spring crop, it is sown immediately after the ides of February;[99] and then again about the time of the Vulcanalia,[1] this last crop being looked upon as the best: many persons, however, sow radishes in March, April, and September. When the plant begins to grow to any size, it is considered a good plan to cover up the leaves successively, and to earth up the root as well; for the part of it which appears above ground is apt to become hard and pithy. Aristomachus recommends the leaves to be taken off in winter, and the roots to be well moulded up, to prevent the water from accumulating about them; and he says, that by using these precautions, they will be all the finer in summer. Some authors have mentioned a plan of making a hole with a dibble, and covering it at the bottom with a layer of chaff, six fingers in depth; upon this layer the seed is put, and then covered over with manure and earth; the result of which is, according to their statement, that radishes are obtained full as large as the hole so made. It is salt, however, that conduces more particularly to their nutriment, and hence it is that they are often watered with brine; in Egypt, too, the growers sprinkle nitre[2] over them, the roots being remarkable for their mildness The salt, too, has the similar effect of removing all their pungency, and when thus treated, they become very similar in their qualities to radishes that have been boiled: for when boiled they become sweet and mild, and eat, in fact, just like turnips.

[98] Fée suggests that he is here speaking of the beet-root, in reality a native of the north of Europe.

[99] Thirteenth of February.

[1] The festival of Vulcan, beginning on the twenty-third of August, and lasting eight days.

[2] A natural production, the carbonate of sodium of the chemists, known from time immemorial by the name of "natron." See B. xxx. c. 46; from which passage it would appear that it was generally employed for watering the leguminous plants.

Medical men recommend raw radishes to be eaten fasting, with salt, for the purpose[3] of collecting the crude humours of the viscera; and in this way they prepare them for the action of emetics. It is said, too, that the juices of this plant are absolutely necessary for the cure of certain diseases of the diaphragm; for it has been found by experiment, in Egypt, that the phthiriasis[4] which attaches itself to the internal parts of the heart, cannot possibly be eradicated by any other remedy, the kings of that country having ordered the bodies of the dead to be opened and examined, for the purpose of enquiring into certain diseases.

Such, too, is the frivolity of the Greeks, that, in the temple of Apollo at Delphi, it is said, the radish is so greatly preferred to all other articles of diet, as to be represented there in gold, the beet in silver, and the rape in lead.—You might be very sure that Manius Curius was not a native of that country, the general whom, as we find stated in our Annals, the ambassadors of the Samnites found busy roasting rape at the fire, when they came to offer him the gold which he so indignantly refused. Moschion, too, a Greek author, has written a volume on the subject of the radish. These vegetables are considered a very useful article of food during the winter, but they are at all times very injurious to the teeth, as they are apt to wear them away; at all events, they give a polish to ivory. There is a great antipathy between the radish[5] and the vine; which last will shrink from the radish, if sown in its vicinity.

CHAP. 27.—PARSNIPS.

The other kinds which have been classified by us among the cartilaginous plants, are of a more ligneous nature; and it is a singular thing, that they have, all of them, a strong flavour. Among these, there is one kind of wild parsnip which grows

[3] Dioscorides recommends these puerilities with the cabbage, and not the radish; though Celsus gives similar instructions with reference to the radish.

[4] It was a general belief with the ancients that the phthiriasis, or morbus pediculosus, has its seat in the heart. It was supposed also that the juice of the radish was able, by reason of its supposed subtlety, to penetrate the coats of that organ.

[5] This is said by other ancient authors, in reference to the *cabbage* and the vine. See B. xxiv. c. i.

spontaneously; by the Greeks it is known as "staphylinos."[6] Another kind[7] of parsnip is grown either from the root transplanted, or else from seed, at the beginning of spring or in the autumn; Hyginus says that this may be done in February, August, September, and October, the ground being dug to a very considerable depth for the purpose. The parsnip begins to be fit for eating at the end of a year, but it is still better at the end of two: it is reckoned more agreeable eating in autumn, and more particularly if cooked in the saucepan; even then, however, it preserves its strong pungent flavour, which it is found quite impossible to get rid of.

The hibiscum[8] differs from the parsnip in being more slender: it is rejected as a food, but is found useful for its medicinal properties. There is a fourth kind,[9] also, which bears a similar degree of resemblance to the parsnip; by our people it is called the "gallica," while the Greeks, who have distinguished four varieties of it, give it the name of "daucus." We shall have further occasion[10] to mention it among the medicinal plants.

CHAP. 28.—THE SKIRRET.

The skirret,[11] too, has had its reputation established by the Emperor Tiberius, who demanded a supply of it every year from Germany. It is at Gelduba,[12] a fortress situate on the banks of the Rhenus, that the finest are grown; from which it would appear that they thrive best in a cold climate. There is a string running through the whole length of the skirret, and which is drawn out after it is boiled; but still, for all this, a considerable proportion of its natural pungency

[6] There is some doubt as to the identity of this plant, but Fée, after examining the question, comes to the conclusion that it is the Daucus Carota, or else Mauritanicus of Linnæus, the common carrot, or that of Mauritania. Sprengel takes it to be either this last or the Daucus guttatus, a plant commonly found in Greece.

[7] The Pastinaca sativa of Linnæus, or common parsnip.

[8] The marsh-mallow, probably, the Althæa officinalis of Linnæus.

[9] The carrot. The Daucus Carota of Linnæus.

[10] In B. xxv. c. 64.

[11] "Siser." The Sium sisarum of Linnæus. See also B. xx. c. 17. It is said to have been originally a native of China.

[12] It is supposed that this is the same with Gelb, near Neuss, in Germany, mentioned by Tacitus, Hist. B. iv. cc. 26. 32.

is retained; indeed, when modified by the addition of honied wine, this is even thought to impart to dishes an additional relish. The larger parsnip has also a similar sting inside, but only when it is a year old. The proper time for sowing the skirret is in the months of February, March, April, August, September, and October.

CHAP. 29.—ELECAMPANE.

Elecampane [13] is not so elongated as the preceding roots, but more substantial and more pungent; eaten by itself it is very injurious to the stomach, but when mixed with other condiments of a sweet nature, it is extremely wholesome. There are several methods employed for modifying [14] its natural acridity and rendering it agreeable to the palate: thus, for instance, when dried it is reduced to a fine flour, and then mixed with some sweet liquid or other, or else it is boiled in vinegar and water, or kept in soak in it; it is also steeped in various other ways, and then mixed with boiled [15] grape-juice, or else incorporated with honey or raisins, or dates with plenty of meat on them. Other persons, again, have a method of preparing it with quinces, or else sorbs or plums, while sometimes the flavour is varied by the addition of pepper or thyme.

This plant is particularly good for weakness of the stomach, and it has acquired a high reputation from the circumstance that Julia [17] Augusta used to eat it daily. The seed of it is quite useless, as the plant is reproduced, like the reed, from eyes extracted from the root. This vegetable, as well as the skirret and the parsnip, is sown both in spring and autumn, a considerable distance being left between the plants; indeed, for elecampane, a space of no less than three feet is required, as

[13] The Inula Helenium of Linnæus. Its English name is derived from Inula campana, that under which it is so highly recommended in the precepts of the School of Health at Salerno. See also B. xx. c. 19. At the present day it is universally rejected as an article of food in any shape.

[14] The School of Salerno says that it may be preserved by being pickled in brine, or else in the juice of rue, which, as Fée remarks, would produce neither more nor less than a veritable poison. The modern Pharmacopœias give the receipt of a conserve of elecampane, which, however, is no longer used.

[15] "Defrutum." Must, boiled down to one half.

[17] The daughter of Augustus Cæsar.

it throws out its shoots to a very considerable distance.[18] Skirrets, however, are best transplanted.

CHAP. 30.—BULBS, SQUILLS, AND ARUM.

Next in affinity to these plants are the bulbs,[19] which Cato, speaking in high terms of those of Megara,[20] recommends most particularly for cultivation. Among these bulbs, the squill,[21] we find, occupies the very highest rank, although by nature it is medicinal, and is employed for imparting an additional sharpness to vinegar;[22] indeed, there is no bulb known that grows to a larger size than this, or is possessed of a greater degree of pungency. There are two varieties of it employed in medicine, the male squill, which has white leaves, and the female squill, with black[23] ones. There is a third kind also, which is good to eat, and is known as the Epimenidian[24] squill; the leaf is narrower than in the other kinds, and not so rough. All the squills have numerous seeds, but they come up much more quickly if propagated from the offsets that grow on the sides. To make them attain a still greater size, the large leaves that grow around them are turned down and covered over with earth; by which method all the juices are carried to the heads. Squills grow spontaneously and in vast numbers in the Baleares and the island of Ebusus, and in the Spanish provinces.[25] The philosopher Pythagoras has written a whole volume on the merits of this plant, setting forth its various me-

[18] The same account nearly is given in Columella, De Re Rust. B. xi. c. 3.

[19] Under this general name were included, probably, garlic, scallions, chives, and some kinds of onions; but it is quite impossible to identify the ancient "bulbus" more closely than this.

[20] It has been suggested that this was probably the onion, the Allium cepa of Linnæus.

[21] The Scilla maritima of Linnæus, the sea-squill.

[22] See B. xx. c. 39. He might have added that it renders vinegar both an emetic, and a violent purgative.

[23] The leaves are in all cases green, and no other colour; but in one kind the squamæ, or bracted leaves, are white, and in another, red.

[24] Theophrastus, Hist. Plant. B. vii. c. 11, gives it this name. As none of the sea-squills can be eaten with impunity, Fée is inclined to doubt if this really was a squill.

[25] They still abound in those places. The Spanish coasts on the Mediterranean, Fée says, as well as the vicinity of Gibraltar, are covered with them.

dicinal properties; of which we shall have occasion to speak more at length in the succeeding Book.[26]

The other species of bulbs are distinguished by their colour, size, and sweetness; indeed, there are some that are eaten raw even—those found in the Tauric Chersonesus, for instance. Next to these, the bulbs of Africa are held in the highest esteem, and after them those of Apulia. The Greeks have distinguished the following varieties: the bulbine,[27] the setanion,[28] the opition,[29] the cyix,[30] the leucoion,[31] the ægilips,[32] and the sisyrinchion[33]—in the last there is this remarkable feature, that the extremities of the roots increase in winter, but during the spring, when the violet appears, they diminish in size and gradually contract, and then it is that the bulb begins to increase in magnitude.

Among the varieties of the bulb, too, there is the plant known in Egypt by the name of "aron."[34] In size it is very nearly as large as the squill, with a leaf like that of lapathum, and a straight stalk a couple of cubits in length, and the thickness of a walking-stick: the root of it is of a milder nature, so much so, indeed, as to admit of being eaten raw.

Bulbs are taken up before the spring, for if not, they are apt to spoil very quickly. It is a sign that they are ripe when the leaves become dry at the lower extremities. When too old they are held in disesteem; the same, too, with the long and the smaller ones; those, on the other hand, which are red and round are greatly preferred, as also those of the largest size. In most of them there is a certain degree of pungency in the upper part, but the middle is sweet. The ancients have

[26] In c. 39.

[27] Fée thinks that this may be the Muscaria botryoïdes of Miller, *Dict. No. I.* See also B. xx. c. 41.

[28] A variety, probably, of the common onion, the Allium cepa of Linnæus.

[29] Some variety of the genus Allium, Fée thinks.

[30] Fée queries whether this may not be some cyperaceous plant with a bulbous root.

[31] A white bulb, if we may judge from the name. The whole of this passage is from Theophrastus, Hist. Plant. B. vii. c. 11.

[32] This has not been identified. The old reading was "ægilops," a name now given to a kind of grass.

[33] The Iris sisyrinchium of Linnæus.

[34] The Arum colocasia of Linnæus, held in great esteem by the ancient Egyptians as a vegetable. The root is not a bulb, but tubercular, and the leaf bears no resemblance to that of the Lapathum, dock or sorrel. It was sometimes known by the name of "lotus."

stated that bulbs are reproduced from seed only, but in the champaign country of Præneste they grow spontaneously, and they grow to an unlimited extent in the territory of the Remi.[35]

CHAP. 31. (6.)—THE ROOTS, FLOWERS, AND LEAVES OF ALL THESE PLANTS. GARDEN PLANTS WHICH LOSE THEIR LEAVES.

Nearly all[36] the garden plants have a single[37] root only, radishes, beet, parsley, and mallows, for example; it is lapathum, however, that has the longest root of them all, it attaining the length of three cubits even. The root of the wild kind is smaller and of a humid nature, and when up it will keep alive for a considerable period. In some of these plants, however, the roots are fibrous, as we find the case in parsley and mallows, for instance; in others, again, they are of a ligneous nature, as in ocimum, for example; and in others they are fleshy, as in beet, and in saffron even more so. In some, again, the root is composed of rind and flesh, as in the radish and the rape; while in others it is jointed, as in hay grass.[38] Those plants which have not a straight root throw out immediately a great number of hairy fibres, orage[39] and blite,[40] for instance: squills again, bulbs, onions, and garlic never have any but a vertical root. Among the plants that grow spontaneously, there are some which have more numerous roots than leaves, spalax,[41] for example, pellitory,[42] and saffron.[43]

Wild thyme, southernwood, turnips, radishes, mint, and rue blossom all[44] at once; while others, again, shed their blossom directly they have begun to flower. Ocimum[45] blossoms gradu-

[35] In Gaul. See B. iv. c. 31.

[36] This passage, and indeed nearly the whole of the Chapter, is borrowed from Theophrastus, Hist. Plant. B. i. c. 9.

[37] Fée thinks that by the expression *μονόῤῥιζα*, Theophrastus means a root that strikes vertically, instead of spreading.

[38] Gramen. See B. xviii. c. 67, and B. xxiv. c. 118.

[39] Atriplex. See B. xx. c. 83.

[40] See B. xx. c. 93.

[41] Poinsinet suggests that this may mean the "mole-plant," *ἀσπάλαξ* being the Greek for "mole."

[42] "Perdicium." See B. xxii. cc. 19, 20.

[43] "Crocus." See B. xxi. c. 17, *et seq.*

[44] This is not the fact. All these assertions are from Theophrastus, Hist. Plant. B. vii. c. 3.

[45] Fée thinks that the ocimum of Pliny is not the basil of the moderns, the Ocimum basilicum of the naturalists. The account, however, here given would very well apply to basil.

ally, beginning at the lower parts, and hence it is that it is so very long in blossom: the same is the case, too, with the plant known as heliotropium.[46] In some plants the flower is white, in others yellow, and in others purple. The leaves fall first[47] from the upper part in wild-marjoram and elecampane, and in rue[48] sometimes, when it has been injured accidentally. In some plants the leaves are hollow, the onion and the scallion,[49] more particularly.

CHAP. 32.—VARIETIES OF THE ONION.

Garlic and onions[50] are invoked by the Egyptians,[51] when taking an oath, in the number of their deities. The Greeks have many varieties[52] of the onion, the Sardian onion, the Samothracian, the Alsidenian, the setanian, the schistan, and the Ascalonian,[53] so called from Ascalon,[54] a city of Judæa. They have, all of them, a pungent smell, which[55] draws tears from the eyes, those of Cyprus more particularly, and those of Cnidos the least of all. In all of them the body is composed of a cartilage of an unctuous[56] nature. The variety known as the setanian is the smallest of them all, with the exception of the Tusculan[57] onion, but it is sweet to the taste. The schistan[58] and the Ascalonian kinds are used for storing. The schistan onion is left during the winter with the leaves on; in the spring it is stripped of them, upon which offsets make

[46] The Heliotropium Europæum of botany. See B. xxii. c. 19.

[47] These assertions, Fée says, are not consistent with modern experience.

[48] See c. 45 of this Book.

[49] "Gethyum." The Allium schœnoprasum, probably, of botany, the ciboul or scallion.

[50] The Allium cepa of Linnæus.

[51] The inhabitants of Pelusium, more particularly, were devoted to the worship of the onion. They held it, in common with garlic, in great aversion as an article of food. At Pelusium there was a temple also in which the sea-squill was worshipped.

[52] With some little variation, from Theophrastus, Hist. Plant. B. vii. c. 4.

[53] Supposed to be identical with the Allium Ascalonicum of Linnæus, the chalotte. Pliny is the only writer who mentions the Alsidenian onion.

[54] To the Ascalonian onion, the scallion, or ciboul, owes its English name.

[55] Owing to the acetic acid which the bulb contains, and which acts on the membranes of the eye.

[56] "Pinguitudinis."

[57] Fée queries whether the early white onion of Florence, the smallest now known among the cultivated kinds, may not possibly be identical with the setanian, or else the Tusculan, variety.

[58] From σχίζω, to "divide" or "tear off."

their appearance at the same divisions as the leaves; it is to this circumstance that this variety owes its name. Taking the hint from this fact, it is recommended to strip the other kinds of their leaves, to make them bulb all the better, instead of running to seed.

The Ascalonian onion is of a peculiar nature, being barren in some measure in the root; hence it is that the Greeks have recommended it to be reproduced from seed, and not from roots: the transplanting, too, they say, should be done later in the spring, at the time the plant germinates, the result being that it bulbs with all the greater rapidity, and hastens, as it were, to make up for lost time; great dispatch, however, is requisite in taking it up, for when ripe it rots with the greatest rapidity. If propagated from roots, it throws out a long stalk, runs rapidly to seed, and dies.

There are considerable differences, too, in the colour of the onion; the whitest of all are those grown at Issus and Sardes. The onions, too, of Crete are held in high esteem, but there is some doubt whether they are not the same as the Ascalonian variety; for when grown from seed they produce a fine bulb, but when planted they throw out a long stalk and run to seed; in fact, they differ from the Ascalonian kind only in the sweetness of their flavour.

Among us there are two principal varieties known of the onion; the scallion, employed for seasonings, is one, known to the Greeks by the name of "gethyon," and by us as the "pallacana;" it is sown in March, April, and May. The other kind is the bulbed or headed[59] onion; it is sown just after the autumnal equinox, or else after the west winds have begun to prevail. The varieties of this last kind, ranged according to their relative degrees of pungency, are the African onion, the Gallic, the Tusculan, the Ascalonian, and the Amiternian: the roundest in shape are the best. The red onion, too, is more pungent than the white, the stored than the fresh, the raw than the cooked, and the dried than the preserved. The onion of Amiternum is cultivated in cold, humid localities, and is the only one that is reproduced from heads,[60] like garlic, the other kinds being grown from seed. This last kind yields no

[59] "Capitata."

[60] For this reason, Fée is inclined to regard it as a variety either of garlic, Allium sativum, or of the chalotte, Allium Ascalonicum of Linnæus.

seed in the ensuing summer, but a bulb only, which dries and keeps; but in the summer after, the contrary is the case, for seed is produced, while the bulb very quickly spoils. Hence it is that every year there are two separate sowings, one of seed for the reproduction of bulbs, and one of bulbs for the growth of seed; these onions keep best in chaff. The scallion has hardly any bulb at all, but a long neck only—hence it is nothing but leaf, and is often cut down, like the leek; for this reason, too, like the leek, it is grown from seed, and not from plants.

In addition to these particulars, it is recommended that the ground intended for sowing onions should be turned up three times, care being taken to remove all roots and weeds; ten pounds of seed is the proper proportion for a jugerum. Savory too, they say, should be mixed with them, the onions being all the finer for it; the ground, too, should be stubbed and hoed four times at least, if not oftener. In Italy, the Ascalonian onion is sown in the month of February. The seed of the onion is gathered when it begins to turn black, and before it becomes dry and shrivelled.

CHAP. 33.—THE LEEK.

While upon this subject, it will be as well, too, to speak of the leek,[61] on account of the affinity which it bears to the plants just mentioned, and more particularly because cut-leek has recently acquired considerable celebrity from the use made of it by the Emperor Nero. That prince, to improve his voice,[62] used to eat leeks and oil every month, upon stated days, abstaining from every other kind of food, and not touching so much as a morsel of bread even. Leeks are reproduced from seed, sown just after the autumnal equinox; if they are intended for cutting,[63] the seed is sown thicker than otherwise. The leeks in the same bed are cut repeatedly, till it is quite exhausted, and they are always kept well manured. If they are

[61] The Allium porrum of Linnæus.

[62] This prejudice in favour of the leek, as Fée remarks, still exists. It is doubtful, however, whether its mucilage has any beneficial effect upon the voice. See B. xx. c. 21.

[63] Fée says, that it is a practice with many gardeners, more harmful than beneficial, to cut the leaves of the leek as it grows, their object being to increase the size of the stalk.

wanted to bulb before being cut, when they have grown to some size they are transplanted to another bed, the extremities of the leaves being snipped off without touching the white part, and the heads stripped of the outer coats. The ancients were in the habit of placing a stone or potsherd upon the leek, to make the head grow all the larger, and the same with the bulbs as well; but at the present day it is the usual practice to move the fibrous roots gently with the weeding-hook, so that by being bent they may nourish the plant, and not withdraw the juices from it.

It is a remarkable fact, that, though the leek stands in need of manure and a rich soil, it has a particular aversion to water; and yet its nature depends very much upon the natural properties of the soil. The most esteemed leeks are those grown in Egypt, and next to them those of Ostia and Aricia.[64] Of the leek for cutting, there are two varieties: that with grass-green[65] leaves and incisions distinctly traced on them, and the leek with paler and rounder leaves, the incisions being more lightly marked. There is a story told, that Mela,[66] a member of the Equestrian order, being accused of mal-administration by order of the Emperor Tiberius, swallowed in his despair leek-juice to the amount of three denarii in weight of silver, and expired upon the spot without the slightest symptom of pain. It is said, however, that a larger dose than this is productive of no injurious effects whatever.[67]

CHAP. 34.—GARLIC.

Garlic[68] is generally supposed, in the country more particularly, to be a good specific[69] for numerous maladies. The ex-

[64] Martial, B. xiii. Epig. 19, mentions the leeks of Aricia.

[65] Fée thinks that this may be the wild leek, which is commonly found as a weed in Spain.

[66] M. Annæus Mela, the brother of L. Seneca the philosopher, and the father of the poet Lucan.

[67] Though Pliny would seem inclined, as Fée says, to credit this story, the juice of the leek is in reality quite harmless.

[68] The Allium sativum of Linnæus. It was much eaten by the Roman soldiers and sailors, and by the field labourers. It is in reference to this vegetable, "more noxious than hemlock," that Horace exclaims—

"O dura messorum ilia!"

[69] It was thought to have the property of neutralizing the venom of

ternal coat consists of membranes of remarkable fineness, which are universally discarded when the vegetable is used; the inner part being formed by the union of several cloves, each of which has also a separate coat of its own. The flavour of it is pungent, and the more numerous the cloves the more pungent it is. Like the onion, it imparts an offensive smell to the breath; but this is not the case when it is cooked. The various species of garlic are distinguished by the periods at which they ripen: the early kind becomes fit for use in sixty days. Another distinction, too, is formed by the relative size of the heads. Ulpicum,[70] also, generally known to the Greeks as "Cyprian garlic," belongs to this class; by some persons it is called "antiscorodon," and in Africa more particularly it holds a high rank among the dishes of the rural population; it is of a larger size than ordinary garlic. When beaten up with oil and vinegar, it is quite surprising what a quantity of creaming foam is produced.

There are some persons who recommend that neither ulpicum nor garlic should be sown on level ground, but say that they should be planted in little mounds trenched up, at a distance of three feet apart. Between each clove, they say, there should be a distance of four fingers left, and as soon as ever three leaves are visible, the heads should be hoed; the oftener they are hoed, the larger the size they will attain. When they begin to ripen, the stalks are bent downwards, and covered over with earth, a precaution which effectually prevents them from running to leaf. In cold soils, it is considered better to plant them in spring than in autumn.

For the purpose of depriving all these plants of their strong smell, it is recommended to set them when the moon is below the horizon, and to take them up when she is in conjunction. Independently of these precautions, we find Menander, one of the Greek writers, recommending those who have been eating garlic to eat immediately afterwards a root of beet

serpents; and though persons who had just eaten of it were not allowed to enter the Temple of the Mother of the Gods, it was prescribed to those who wished to be purified and absolved from crimes. It is still held in considerable esteem in the south of Europe, where, by the lower classes, great medicinal virtues are ascribed to it.

[70] Theophrastus says, Hist. Plant. B. vii. c. 4, that this is the largest of all the varieties of garlic.

roasted on hot coals; if this is done, he says, the strong smell of the garlic will be effectually neutralized. Some persons are of opinion, that the proper period for planting garlic and ulpicum is between the festival of the Compitalia [71] and that of the Saturnalia.[72] Garlic, too, can be grown from seed, but it is very slow, in such case, in coming to maturity; for in the first year, the head attains the size only of that of a leek, in the second, it separates into cloves, and only in the third it arrives at maturity; there are some, however, who think that garlic grown this way is the best. Garlic should never be allowed to run to seed, but the stalk should be twisted, to promote its growth, and to make the head attain a larger size.

If garlic or onions are wanted to keep some time, the heads should be dipped in salt water, made luke-warm; by doing this, they will be all the better for keeping, though quite worthless for reproduction. Some persons content themselves with hanging them over burning coals, and are of opinion that this is quite sufficient to prevent them from sprouting: for it is a well-known fact, that both garlic and onions sprout when out of the ground, and that after throwing out their thin shoots they shrivel away to nothing. Some persons are of opinion, too, that the best way of keeping garlic is by storing it in chaff. There is a kind [73] of garlic that grows spontaneously in the fields, and is known by the name of "alum." To preserve the seeds that are sown there from the remorseless ravages of the birds, this plant is scattered over the ground, being first boiled, to prevent it from shooting. As soon as ever they have eaten of it, the birds become so stupefied as to be taken with the hand even,[74] and if they remain but a few moments only on the spot, they fall fast asleep. There is a wild garlic, too, generally known as "bear's" garlic;[75] it has exactly the smell of millet, with a very small head and large leaves.

[71] Second of May. [72] Seventeenth of December.

[73] The Allium oleraceum of Linnæus.

[74] Fée refuses credence to this story.

[75] "Ursinum." The Allium ursinum of Linnæus. Instead, however, of having the comparatively mild smell of millet, its odour is powerful; so much so, as to impart a strong flavour to the milk of the cows that eat of it. It is very common, Fée says, in nearly every part of France.

CHAP. 35. (7.)—THE NUMBER OF DAYS REQUIRED FOR THE RESPECTIVE PLANTS TO MAKE THEIR APPEARANCE ABOVE GROUND.

Among the garden[76] plants which make their appearance most speedily above ground, are ocimum, blite, the turnip, and rocket; for they appear above the surface the third day after they are sown. Anise, again, comes up on the fourth day, the lettuce on the fifth, the radish on the sixth, the cucumber and the gourd on the seventh—the cucumber rather the first of the two—cresses and mustard on the fifth, beet on the sixth day in summer and the tenth in winter, orage on the eighth, onions on the nineteenth or twentieth, and scallions on the tenth or twelfth. Coriander, again, is more stubborn in its growth, cunila and wild marjoram do not appear till after the thirtieth day, and parsley comes up with the greatest difficulty of all, for at the very earliest it is forty days before it shows itself, and in most instances as much as fifty.

The age,[77] too, of the seed is of some importance in this respect; for fresh seed comes up more rapidly in the case of the leek, the scallion, the cucumber, and the gourd, while in that of parsley, beet, cardamum, cunila, wild marjoram, and coriander, seed that has been kept for some time is the best.

There is one remarkable circumstance[78] in connection with the seed of beet; it does not all germinate in the first year, but some of it in the second, and some in the third even; hence it is that a considerable quantity of seed produces only a very moderate crop. Some plants produce only in the year in which they are set, and some, again, for successive years, parsley, leeks, and scallions[79] for instance; indeed, these plants, when once sown, retain their fertility, and produce for many years.

[76] The whole nearly of this Chapter is borrowed from Theophrastus, Hist. Plant. B. vii. cc. 1 and 2. It must be borne in mind that what the Romans called the "third" day would with us be the "second," and so on; as in reckoning, they included the day reckoned *from*, as well as the day reckoned *to*.

[77] Fée remarks, that most of the observations made in this Chapter are well founded.

[78] This statement, Fée remarks, is entirely a fiction, it being impossible for seed to acquire, the second year, a faculty of germinating which it has not had in the first.

[79] This is true, but, as Fée observes, the instances might be greatly extended.

CHAP. 36.—THE NATURE OF THE VARIOUS SEEDS.

In most plants the seed is round, in some oblong; it is broad and foliaceous in some, orage for instance, while in others it is narrow and grooved, as in cummin. There are differences, also, in the colour of seeds, which is either black or white; while some seeds are woody and hard, in radishes, mustard, and rape, the seeds are enclosed in pods. In parsley, coriander, anise, fennel, and cummin, the seed has no covering at all, while in blite, beet, orage, and ocimum, it has an outer coat, and in the lettuce it is covered with a fine down. There is no seed more prolific than that of ocimum;[80] it is generally recommended[81] to sow it with the utterance of curses and imprecations, the result being that it grows all the better for it; the earth, too, is rammed down when it is sown, and prayers offered that the seed may never come up. The seeds which are enveloped in an outer coat, are dried with considerable difficulty, that of ocimum more particularly; hence it is that all these seeds are dried artificially, their fruitfulness being greatly promoted thereby.

Plants in general come up better when the seed is sown in heaps than when it is scattered broad-cast: leeks, in fact, and parsley are generally grown by sowing the seed in little bags:[82] in the case of parsley, too, a hole is made with the dibble, and a layer of manure inserted.

All garden plants grow either from seed or from slips, and some from both seed and suckers, such as rue, wild marjoram, and ocimum,[83] for example—this last being usually cut when it is a palm in height. Some kinds, again, are reproduced from both seed and root, as in the case of onions, garlic, and bulbs, and those other plants of which, though annuals themselves, the roots retain their vitality. In those plants which grow from the root, it lives for a considerable time, and throws out offsets, as in bulbs, scallions, and squills for example.—

[80] Fée says that basil, the Ocimum basilicum of Linnæus, is not meant here, nor yet the leguminous plant that was known to the Romans by that name.

[81] A singular superstition truly! Theophrastus says the same in relation to cummin seed.

[82] This is not done at the present day.

[83] This can hardly be our basil, the Ocimum basilicum, for that plant is an annual.

Others, again, throw out offsets, though not from a bulbous root, such as parsley and beet, for instance. When the stalk is cut, with the exception[84] of those which have not a rough stem, nearly all these plants put forth fresh shoots, a thing that may be seen in ocimum,[85] the radish,[86] and the lettuce,[87] which are in daily use among us; indeed, it is generally thought that the lettuce which is grown from a fresh sprouting, is the sweetest. The radish, too, is more pleasant eating when the leaves have been removed before it has begun to run to stalk. The same is the case, too, with rape; for when the leaves are taken off, and the roots well covered up with earth, it grows all the larger for it, and keeps in good preservation till the ensuing summer.

CHAP. 37.—PLANTS OF WHICH THERE IS BUT A SINGLE KIND. PLANTS OF WHICH THERE ARE SEVERAL KINDS.

Of ocimum, lapathum, blite, cresses, rocket, orage, coriander, and anise respectively, there is but a single kind, these plants being the same everywhere, and no better in one place than in another. It is the general belief that stolen[88] rue grows the best, while, on the other hand, bees[89] that have been stolen will never thrive. Wild mint, cat-mint, endive, and pennyroyal, will grow even without any cultivation. With reference to the plants of which we have already spoken, or shall have occasion to speak, there are numerous varieties of many of them, parsley more particularly.

(8.) As to the kind of parsley[90] which grows spontaneously in moist localities, it is known by the name of "helioselinum;"[91] it has a single leaf[92] only, and is not rough at the edges. In

[84] Fée suggests that Pliny may have intended here to except the Monocotyledons, for otherwise his assertion would be false.

[85] This, Fée says, cannot be basil, for when cut it will not shoot again.

[86] The radish is not mentioned in the parallel passage by Theophrastus.

[87] The lettuce, as Fée remarks, will not shoot again when cut down.

[88] This puerility, Fee observes, runs counter to the more moral adage, that "stolen goods never prosper."

[89] See B. xi. c. 15.

[90] This variety, Fée says, is the Apium graveolens of Linnæus.

[91] Or marsh-parsley.

[92] Pliny has mistranslated, or rather misread, the passage of Theophrastus, who says, B. vii. c. 6, that this kind of parsley is *μανόφυλλον*,

dry places, we find growing the kind known as "hipposelinum,"[93] consisting of numerous leaves, similar to helioselinum. A third variety is the oreoselinum,[94] with leaves like those of hemlock, and a thin, fine, root, the seed being similar to that of anise, only somewhat smaller.

The differences, again, that are found to exist in cultivated parsley,[95] consist in the comparative density of the leaves, the crispness or smoothness of their edges, and the thinness or thickness of the stem, as the case may be: in some kinds, again, the stem is white, in others purple, and in others mottled.

CHAP. 38.—THE NATURE AND VARIETIES OF TWENTY-THREE GARDEN PLANTS. THE LETTUCE; ITS DIFFERENT VARIETIES.

The Greeks have distinguished three varieties of the lettuce;[96] the first with a stalk so large, that small garden gates,[97] it is said, have been made of it: the leaf of this lettuce is somewhat larger than that of the herbaceous, or green lettuce, but extremely narrow, the nutriment seeming to be expended on the other parts of the plant. The second kind is that with a rounded[98] stalk; and the third is the low, squat lettuce,[99] generally known as the Laconian lettuce.

"thinly covered with leaves," and not *μονόφυλλον*, "having a single leaf." Palladius (*In Aprili.*) translates it, "molli folio," "with a soft leaf;" but, though Fée commends this version, it is not correct.

[93] Or "horse-parsley." Hardouin takes this to be Macedonian parsley, the Bubon Macedonicum of Linnæus. Fée, following C. Bauhin and Sprengel, is inclined to identify it with Macerona, the Smyrnium olusatrum of Linnæus.

[94] Or "mountain-parsley." Probably the Athamanta oreoselinum of Linnæus. Some commentators, however, take it to be the Laserpitium formosum of Wildenow. Sprengel identifies it with the Selinum oreoselinum of Linnæus.

[95] The Apium petroselinum, probably, of Linnæus.

[96] The Lactuca sativa of Linnæus. This account of the Greek varieties is from Theophrastus, Hist. Plant. B. vii. c. 4.

[97] This, no doubt, is fabulous, and on a par with the Greek tradition that Adonis concealed himself under the leaves of a lettuce, when he was attacked and killed by the wild boar. The Coss, or Roman, lettuce, as Fée remarks, is the largest of all, and that never exceeds fifteen to twenty inches in height, leaves, stalk and all.

[98] This would seem not to be a distinct variety, as the rounded stalk is a characteristic of them all.

[99] "Sessile." A cabbage-lettuce, probably; though Hardouin dissents from that opinion.

Some persons[1] have made distinctions in reference to their respective colours, and the times for sowing them: the black lettuce is sown in the month of January, the white in March, and the red in April; and they are fit for transplanting, all of them, at the end of a couple of months. Those, again, who have pursued these enquiries even further than this, have distinguished a still greater number of varieties of them—the purple, the crisped, the Cappadocian,[2] and the Greek lettuce, this last having a longer leaf than the rest, and a broad stalk: in addition to which, there is one with a long, narrow leaf, very similar to endive in appearance. The most inferior kind, however, of all, is the one to which the Greeks, censuring it for its bitterness, have given the name of "picris."[3] There is still another variety, a kind of white lettuce, called "meconis,"[4] a name which it derives from the abundance of milk, of a narcotic quality, which it produces; though, in fact, it is generally thought that they are all of them of a soporific tendency. In former times, this last was the only kind of lettuce that was held in any esteem[5] in Italy, the name "lactuca" having been given it on account of the milk[6] which it contains.

The purple kind, with a very large root, is generally known as the Cæcilian[7] lettuce; while the round one, with an extremely diminutive root and broad leaves, is known to some persons as the "astytis,"[8] and to others as the "eunychion," it having the effect, in a remarkable degree, of quenching the amorous propensities. Indeed, they are, all of them, possessed of cooling and refreshing properties, for which reason it is, that they are so highly esteemed in summer; they have the effect, also, of removing from the stomach distaste for food, and of promoting the appetite. At all events, we find it stated, that the late Emperor Augustus, when ill, was saved

[1] Columella more particularly. There are still varieties known respectively as the black, brown, white, purple, red, and blood-red lettuce.

[2] Martial, B. v. Epig. 79, gives to this lettuce the epithet of "vile."

[3] It has been suggested that this may have been wild endive, the Cichoreum intubus of botanists.

[4] Or "poppy-lettuce." See B. xx. c. 26. The Lactuca virosa, probably, of modern botany, the milky juice of which strongly resembles opium in its effects.

[5] For its medicinal qualities, most probably. [6] "Lac."

[7] So called, Columella informs us, from Cæcilius Metellus, Consul A.U.C. 503.

[8] Meaning "antaphrodisiac." The other name has a kindred meaning.

on one occasion,[9] thanks to the skill of his physician, Musa,[10] by eating lettuces, a food which the excessive scruples of his former physician, C. Æmilius, had forbidden him. At the present day, however, lettuces have risen into such high estimation, that a method has been discovered even of preserving them during the months in which they are out of season, by keeping them in oxymel.[11] It is generally supposed, also, that lettuces have the effect of making blood.

In addition to the above varieties, there is another kind of lettuce known as the "goats' lettuce,"[12] of which we shall have occasion to make further mention when we come to the medicinal plants: at the moment, too, that I am writing this, a new species of cultivated lettuce has been introduced, known as the Cilician lettuce, and held in very considerable esteem; the leaf of it is similar to that of the Cappadocian lettuce, except that it is crisped, and somewhat larger.

CHAP. 39.—ENDIVE.

Endive, though it cannot exactly be said to be of the same genus as the lettuce, still cannot be pronounced to belong to any other.[13] It is a plant better able to endure the rigours of the winter than the lettuce,[14] and possessed of a more acrid taste, though the flavour of the stalk[15] is equally agreeable. Endive is sown at the beginning of spring, and transplanted at the end of that season. There is also a kind of spreading[16] endive, known in Egypt as "cichorium,"[17] of which we shall have occasion[18] to speak elsewhere more at length.

[9] A.U.C. 731.

[10] Antonius Musa. For this service he received a large sum of money, and the permission to wear a gold ring, and a statue was erected by public subscription in honour of him, near that of Æsculapius. He is supposed to be the person described by Virgil in the Æneid, B. xii. l. 390, *et seq.*, under the name of Iapis. See B. xxix. c. 5 of this work.

[11] Vinegar and honey; a mixture very ill-adapted, as Fée observes, to preserve either the medicinal or alimentary properties of the lettuce.

[12] "Caprina lactuca." See B. xx. c. 24.

[13] Endive, in fact, belongs to the same family as the lettuce.

[14] This is not the case; unless, indeed, under the name "lactuca," Pliny would include several plants, that in reality are not lettuces.

[15] The stalk, in fact, is more intensely bitter than the leaves.

[16] "Erraticum." Wild endive.

[17] From which comes the French "chicorée," and our "chicory," or "succory."

[18] In B. xx. c. 29, and B. xxi. c. 52.

A method has been discovered of preserving all the thyrsi or leaves of the lettuce in pots, the object being to have them fresh when wanted for boiling. Lettuces may be sown all the year[19] through in a good soil, well-watered and carefully manured;[20] two months being allowed to intervene between sowing and transplanting, and two more between transplanting and gathering them when ripe. The rule is, however, to sow them just after the winter solstice, and to transplant when the west winds begin to prevail, or else to sow at this latter period, and to plant out at the vernal equinox. The white lettuce is the best adapted for standing the rigours of the winter.

All the garden plants are fond of moisture; lettuces thrive, more particularly, when well manured, and endive even more so. Indeed, it is found an excellent plan to plant them out with the roots covered up in manure, and to keep up the supply, the earth being cleared away for that purpose. Some, again, have another method of increasing their size; they cut them[21] down when they have reached half a foot in height, and cover them with fresh swine's dung. It is the general opinion that those lettuces only will admit of being blanched which are produced from white seed; and even then, as soon as they begin to grow, sand from the sea-shore should be spread over them, care being taken to tie the leaves as soon as ever they begin to come to any size.

CHAP. 40.—BEET: FOUR VARIETIES OF IT.

Beet[22] is the smoothest of all the garden plants. The Greeks distinguish two kinds of beet, according to the colour, the black and the white. The last, which is the kind generally preferred, has but very little seed, and is generally known as the Sicilian[23] beet; just as it is the white lettuce that is held in the highest degree of esteem. Our people, also, distinguish two varieties of beet, the spring and the autumn kinds, so

[19] The usual times for sowing the lettuce are before winter and after February.

[20] An excess of manure is injurious to the lettuce.

[21] As already stated in a previous Note (p. 179), lettuces when cut down will not grow again, with the exception of a few worthless lateral branches.

[22] From Theophrastus, Hist. Plant. B. vii. c. 4.

[23] Not the Beta sicla of modern botany, Fée thinks. The black beet of the ancients would be one of the dark purple kinds.

called from the periods of sowing; although sometimes we find beet sown in June even. This is a plant, too, that is sometimes transplanted; and it thrives all the better, like the lettuce, if the roots are well covered with manure, in a moist soil. Beet is mostly eaten[24] with lentils and beans; it is prepared also in the same way as cabbage, with mustard more particularly, the pungency of which relieves its insipidity. Medical men are of opinion that beet is a more unwholesome[25] vegetable than cabbage; hence it is that I never remember seeing it served at table. Indeed, there are some persons who scruple to taste it even, from a conviction that it is a food suitable only for persons of a robust constitution.

Beet is a vegetable with twofold characteristics, partaking of the nature of the cabbage in its leaves and resembling a bulb in the root; that which grows to the greatest breadth being the most highly esteemed. This plant, like the lettuce, is made to grow to head by putting a light weight upon it the moment it begins to assume its proper colour. Indeed, there is no garden plant that grows to a larger head than this, as it sometimes spreads to a couple of feet in breadth, the nature of the soil contributing in a very considerable degree to its size: those found in the territory of Circeii attain the largest size. Some persons[26] think that the best time for sowing beet is when the pomegranate is in flower, and are of opinion that it ought to be transplanted as soon as it has thrown out five leaves. There is a singular difference—if indeed it really exists—between the two varieties of beet, the white kind being remarkable for its purgative qualities, and the black being equally astringent. When wine in the vat has been deteriorated by assuming a flavour like[27] that of cabbage, its original flavour is restored, it is said, by plunging beet leaves into it.

[24] It was only the leaf of beet, and not the root, that was eaten by the ancients. From Martial, B. xiii. Epig. 10, we learn that the leaves were preserved in a mixture of wine and pepper.

[25] Though not positively unwholesome, the leaves would form an insipid dish, that would not agree with all stomachs. Galen says that it cannot be eaten in great quantities with impunity, but Diphilus the physician, as quoted by Athenæus, B. ix. c. 3, says the reverse. Some MSS. read here "innocentiorem," "more harmless."

[26] Columella says the same, De Re Rust. B. xi. c. 3.

[27] Fée would seem to render this, "when wine has been spoiled by cabbage leaves being mixed with it."

CHAP. 41—CABBAGES; THE SEVERAL VARIETIES OF THEM.

Cabbage and coleworts, which at the present day are the most highly esteemed of all the garden vegetables, were held in little repute, I find, among the Greeks; but Cato,[28] on the other hand, sings the wondrous praises of the cabbage, the medicinal properties of which we shall duly enlarge[29] upon when we come to treat of that subject. Cato distinguishes three varieties of the cabbage; the first, a plant with leaves wide open, and a large stalk; a second, with crisped leaves, to which he gives the name of "apiaca;"[30] and a third, with a thin stalk, and a smooth, tender leaf, which with him ranks the lowest of all. Cabbages may be sown the whole year through, as we find that they are cut at all periods of the year; the best time, however, for sowing them is at the autumnal equinox, and they are usually transplanted as soon as five leaves are visible. In the ensuing spring after the first cutting, the plant yields sprouts, known to us as "cymæ."[31] These sprouts, in fact, are small shoots thrown out from the main stem, of a more delicate and tender quality than the cabbage itself. The exquisite palate, however, of Apicius[32] rejected these sprouts for the table, and his example was followed by the fastidious Drusus Cæsar; who did not escape, however, the censures of his father, Tiberius, for being so over-nice. After the cymæ have made their appearance the cabbage throws out its summer and autumn shoots, and then its winter ones; after which, a new crop of cymæ is produced, there being no plant so productive as this, until, at last, it is quite exhausted by its extreme fertility. A second time for sowing cabbages is immediately after the vernal equinox, the plants of this growth being transplanted at the end of spring, that they may not run up into sprouts before coming to a top: and a third sowing takes place about the summer solstice, the transplanting being done in summer if the soil is moist, but, if too dry, in autumn. When moisture and manure are supplied in small quantities, the flavour of the cabbage is all the

[28] De Re Rust. cc. 156, 157. [29] In B. xx. c. 33.

[30] Or "parsley" cabbage, so called from its crisped leaves: the curled colewort, or Brassica viridis crispa of C. Bauhin.

[31] The same as our Brussels sprouts. Columella, however, B. xi. c. 3, and B. xii. c. 7, speaks of the Brassica cyma as a distinct variety of cabbage.

[32] See B. viii. c. 77.

more agreeable, but when they are supplied in greater abundance, the plants attain a larger size. Asses' dung is the best adapted for its growth.

The cabbage, too, is one of those articles so highly esteemed by epicures; for which reason it will not be amiss if we speak of it at somewhat greater length. To obtain plants equally remarkable for their size and flavour, care must be taken first of all to sow the seed in ground that has had a couple of turnings up, and then to follow up the shoots as they appear above ground by moulding them up, care being taken to throw up the earth over them as they increase in luxuriance, and to let nothing but the summit appear above the surface. This kind is known as the Tritian[33] cabbage: in money and labour it costs twice as much as any of the others.

The other varieties of the cabbage[34] are numerous—there is the Cumanian cabbage, with leaves that lie close to the ground, and a wide, open head; the Aricinian[35] cabbage, too, of no greater height, but with more numerous leaves and thinner—this last is looked upon as the most useful of them all, for beneath nearly all of the leaves there are small shoots thrown out, peculiar to this variety. The cabbage, again, of Pompeii[36] is considerably taller, the stalk, which is thin at the root, increasing in thickness as it rises among the leaves, which are fewer in number and narrower; the great merit of this cabbage is its remarkable tenderness, although it is not able to stand the cold. The cabbage of Bruttium,[37] on the other hand, thrives all the better for cold; the leaves of it are remarkably large, the stalk thin, and the flavour pungent. The leaves, again, of the Sabine[38] cabbage are crisped to such a degree as to excite our surprise, and their thickness is such as to quite exhaust the stem; in sweetness, however, it is said to surpass all the others.

There have lately come into fashion the cabbages known as the "Lacuturres;"[39] they are grown in the valley of Aricia,

[33] The Brassica oleracea capitata of Lamarck, and its varieties.
[34] The ordinary cabbage, or Brassica oleracea of Linnæus.
[35] A variety, Fée thinks, of the Lacuturrian cabbage.
[36] The Brassica oleracea botrytis of Linnæus, the cauliflower.
[37] Or Calabrian cabbage: it has not been identified.
[38] The Brassica oleracea Sabellica of Linnæus, or fringed cabbage.
[39] Or "Lake-towers." The turnip-cabbage or rape-colewort, the Brassica oleracea gongyloides of Linnæus.

where there was formerly a lake, now no longer in existence, and a tower which is still standing. The head of this cabbage is very large, and the leaves are almost without number, some of them being round and smooth, and others long and sinewy; indeed, there is no cabbage that runs to a larger head than this, with the sole exception of the Tritian variety, which has a head sometimes as much as a foot in thickness, and throws out its cymæ the latest of all.

In all kinds of cabbages, hoar-frost contributes very materially to their sweetness; but it is apt to be productive of considerable injury, if care is not taken to protect the pith by cutting them aslant. Those plants which are intended for seed are never cut.

There is another kind, again, that is held in peculiar esteem, and which never exceeds the height of an herbaceous plant; it is known by the name of "halmyridia,"[40] from the circumstance of its growing on the sea-shore[41] only. It will keep green and fresh during a long voyage even, if care is taken not to let it touch the ground from the moment that it is cut, but to put it into oil-vessels lately dried, and then to bung them so as to effectually exclude all air. There are some[42] who are of opinion, that the plant will come to maturity all the sooner if some sea-weed is laid at the root when it is transplanted, or else as much pounded nitre as can be taken up with three fingers; and others, again, sprinkle the leaves with trefoil seed and nitre pounded together.[43] Nitre, too, preserves the greenness of cabbage when cooked, a result which is equally ensured by the Apician mode of boiling, or in other words, by steeping the plants in oil and salt before they are cooked.

There is a method of grafting vegetables by cutting the shoots and the stalk, and then inserting in the pith the seed

[40] Generally thought to be the Crambe maritima of botanists, sea-cabbage, or sea-kale. Some, however, take it to be the Convolvulus soldanella of Linnæus. See B. xx. c. 38.

[41] From ἅλς, the "sea."

[42] He alludes to the statement made by Columella, probably, De Re Rust. B. xi. c. 3.

[43] Fée remarks, that probably we here find the first germs of the practice which resulted in the making of sour-krout (sauer-kraut). Dalechamps censures Pliny for the mention of trefoil here, the passage which he has translated speaking not of that plant, but of the trefoil or three-leaved cabbage.

of another plant; a plan which has been adopted with the wild cucumber even. There is another kind of wild cabbage, also, the lapsana,[44] which has become famous since the triumphs of the late Emperor Julius, in consequence of the songs and jokes of his soldiers more particularly; for in the alternate lines sung by them, they used to reproach him for having made them live on lapsana at the siege of Dyrrhachium, and to rally him upon the parsimonious scale on which he was in the habit of recompensing their services. The lapsana is nothing more than a wild cyma.[45]

CHAP. 42.—WILD AND CULTIVATED ASPARAGUS.

Of all the garden plants, asparagus is the one that requires the most delicate attention in its cultivation. We have already[46] spoken at considerable length of its origin, when treating of the wild plants, and have mentioned that Cato[47] recommends it to be grown in reed-beds. There is another kind, again, of a more uncultivated nature than the garden asparagus, but less pungent than corruda;[48] it grows upon the mountains in different countries, and the plains of Upper Germany are quite full of it, so much so, indeed, that it was a not unhappy remark of Tiberius Cæsar, that a weed grows there which bears a remarkably strong resemblance to asparagus. That which grows spontaneously upon the island of Nesis, off the coast of Campania, is looked upon as being by far the best of all.

Garden asparagus is reproduced from roots,[49] the fibres of which are exceedingly numerous, and penetrate to a considerable depth. When it first puts forth its shoots, it is green; these in time lengthen out into stalks, which afterwards throw

[44] The same as the "chara," probably, mentioned by Cæsar, Bell. Civ. B. iii. Hardouin thinks that it is the common parsnip, while Clusius and Cuvier would identify it with the Crambe Tatarica of Hungary, the roots of which are eaten in time of scarcity at the present day. Fée suggests that it may belong to the Brassica napo-brassica of Linnæus, the rape-colewort. See B. xx. c. 37.

[45] Or cabbage-sprout.

[46] In B. xvi. c. 67. The Asparagus officinalis of Linnæus.

[47] De Re Rust. c. 161.

[48] Or wild sperage. See B. xvi. c. 67; also B. xx. c. 43.

[49] "Spongiis." Fée is at a loss to know why the name "spongia" should have been given to the roots of asparagus. Probably, as Facciolati says, from their growing close and matted together. See the end of this Chapter.

out streaked branches from the head: asparagus admits, also, of being grown from seed.

Cato[50] has treated of no subject with greater care than this, the last Chapter of his work being devoted to it, from which we may conclude that it was quite new to him, and a subject which had only very recently occupied his attention. He recommends that the ground prepared for it should be a moist or dense soil, the seed being set at intervals of half a foot every way, to avoid treading upon the heads; the seed, he says, should be put two or three into each hole, these being made with the dibble as the line runs—for in his day, it should be remembered, asparagus was only grown from seed—this being done about the vernal equinox. It requires, he adds, to be abundantly manured, and to be kept well hoed, due care being taken not to pull up the young plants along with the weeds. The first year, he says, the plants must be protected from the severity of the winter with a covering of straw, care being taken to uncover them in the spring, and to hoe and stub up the ground about them. In the spring of the third year, the plants must be set fire to, and the earlier the period at which the fire is applied, the better they will thrive. Hence it is, that as reed-beds[51] grow all the more rapidly after being fired, asparagus is found to be a crop remarkably well suited for growing with them. The same author recommends, however, that asparagus should not be hoed before the plants have made their appearance above-ground, for fear of disturbing the roots; and he says that in gathering the heads, they should be cut close to the root, and not broken off at the surface, a method which is sure to make them run to stalk and die. They should be cut, he says, until they are left to run to seed, and after the seed is ripe, in spring they must be fired, care being taken, as soon as they appear again, to hoe and manure them as before. After eight or nine years, he says, when the plants have become old, they must be renewed, after digging and manuring the ground, by replanting the roots at intervals of a foot, care being taken to employ sheep's dung more particularly for the purpose, other kinds of manure being apt to produce weeds.

No method of cultivating this plant that has since been tried has been found more eligible than this, with the sole exception that the seed is now sown about the ides of February, by laying

[50] De Re Rust. c. 161. [51] See B. xvii. c. 47.

it in heaps in small trenches, after steeping it a considerable time in manure; the result of which is that the roots become matted, and form into spongy tufts, which are planted out at intervals of a foot after the autumnal equinox, the plants continuing to be productive so long as ten years even. There is no soil more favourable to the growth of asparagus, than that of the gardens of Ravenna.[52]

We have already[53] spoken of the corruda, by which term I mean the wild asparagus, by the Greeks called "orminos," or "myacanthos," as well as by other names. I find it stated, that if rams' horns are pounded, and then buried in the ground, asparagus will come up.[54]

CHAP. 43.—THISTLES.

It really might have been thought that I had now given an account of all the vegetable productions that are held in any degree of esteem, did there not still remain one plant, the cultivation of which is extremely profitable, and of which I am unable to speak without a certain degree of shame. For it is a well-known fact, that some small plots of land, planted with thistles,[55] in the vicinity of Great Carthage and of Corduba more particularly, produce a yearly income of six thousand sesterces;[56] this being the way in which we make the monstrous productions even of the earth subservient to our gluttonous appetites, and that, too, when the very four-footed brutes[57] instinctively refuse to touch them.

Thistles are grown two different ways, from plants set in autumn, and from seed sown before the nones of March;[58] in which latter case they are transplanted before the ides of November,[59] or, where the site is a cold one, about the time that the west winds prevail. They are sometimes manured even,

[52] On the contrary, Martial says that the asparagus of Ravenna was no better than so much wild asparagus.

[53] In B. xvi. c. 67. See also c. 19 of this Book.

[54] Dioscorides mentions this absurdity, but refuses to credit it.

[55] Probably the artichoke, the Cinara scolymus of Linnæus. See further on this subject, B. xx. c. 99.

[56] About £24 sterling. "Sestertia" has been suggested, which would make the sum a thousand times as much.

[57] The ass, of course, excepted, which is fond of thistles.

[58] Seventh of March. [59] Thirteenth of November.

and if[60] such is the will of heaven, grow all the better for it. They are preserved, too, in a mixture of honey and vinegar,[61] with the addition of root of laser and cummin—so that a day may not pass without our having thistles at table.[62]

CHAP. 44.—OTHER PLANTS THAT ARE SOWN IN THE GARDEN: OCIMUM; ROCKET; AND NASTURTIUM.

For the remaining plants a brief description will suffice. The best time for sowing ocimum,[63] it is said, is at the festival of the Parilia;[64] though some say that it may be done in autumn as well, and recommend, when it is sown in winter, to drench the seed thoroughly with vinegar. Rocket,[65] too, and nasturtium[66] may be grown with the greatest facility either in summer or winter. Rocket, more particularly, is able to stand the cold, and its properties are quite different from those of the lettuce, as it is a great provocative of lust. Hence it is that we are in the habit of mixing these two plants in our dishes, the excess of cold in the one being compensated by the equal degree of heat in the other. Nasturtium has received that name from[67] the smarting sensation which its pungency causes to the nostrils, and hence it is that a certain notion of smartness has attached itself to the word, it having become quite a proverbial saying, that a sluggish man should eat nasturtium, to arouse him from his torpidity. In Arabia, it is said, this plant attains a size that is quite marvellous.

CHAP. 45.—RUE.

Rue,[68] too, is generally sown while the west winds prevail, as well as just after the autumnal equinox. This plant has an extreme aversion to cold, moisture, and dung; it loves dry, sunny localities, and a soil more particularly that is rich in brick clay; it requires to be nourished, too, with ashes, which

[60] "Si Dîs placet." [61] Oxymel.

[62] This is evidently said contemptuously.

[63] See further as to the identity of this plant, B. xx. c. 48.

[64] Twenty-second of April.

[65] Brassica eruca of Linnæus. See B. xx. c. 49.

[66] Cresses, or nosesmart, the Lepidium sativum of Linnæus. See B. xx. c. 50. [67] "Quod nasum torqueat."

[68] The Ruta graveolens of Linnæus. See B. xx. c. 51. This offensive herb, though looked upon by the Romans as a vegetable, is now only regarded as an active medicament of almost poisonous qualities.

should be mixed with the seed as well, as a preservative against the attacks of caterpillars. The ancients held rue in peculiar esteem; for I find that honied wine flavoured with rue was distributed to the people, in his consulship,[69] by Cornelius Cethegus, the colleague of Quintus Flamininus, after the closing of the Comitia. This plant has a great liking[70] for the fig-tree, and for that tree only; indeed, it never thrives better than when grown beneath that tree. It is generally grown from slips, the lower end of which is inserted in a perforated[71] bean, which holds it fast, and so nurtures the young plant with its juices. It also reproduces itself;[72] for the ends of the branches bending downwards, the moment they reach the ground, they take root again. Ocimum[73] is of a very similar nature to rue, except that it dries with greater difficulty. When rue has once gained strength, there is considerable difficulty in stubbing it, as it causes itching ulcerations on the hands, if they are not covered or previously protected by being rubbed with oil. Its leaves, too, are preserved, being packed in bundles for keeping.

CHAP. 46.—PARSLEY.

Parsley is sown immediately after the vernal equinox, the seed being lightly beaten[74] first in a mortar. It is thought that, by doing this, the parsley will be all the more crisped, or else by taking care to beat it down when sown with a roller or the feet. It is a peculiarity of this plant, that it changes colour: it has the honour, in Achaia, of forming the wreath of the victors in the sacred contests of the Nemean Games.

CHAP. 47.—MINT.

It is at the same season, too, that mint[75] is transplanted; or,

[69] A.U.C. 421.

[70] It so happens that it thrives best on the same soil as the fig-tree.

[71] This practice has no beneficial effect whatever.

[72] This is not the fact; for its branches never come in contact with the ground.

[73] Pliny has derived the greater part of this Chapter from Theophrastus, Hist. Plant. B. vii. c. 5, and Columella, B. xi. c. 3.

[74] For the purpose of separating the seeds, which are slightly joined together; and of disengaging a portion of the perisperm. At the present day this is not done, for fear of bursting the kernel of the seed.

[75] See B. xx. c. 53.

if it has not yet germinated, the matted tufts of the old roots are used for the purpose. This plant, too, is no less fond of a humid soil than parsley; it is green in summer and turns yellow in winter. There is a wild kind of mint, known to us as "mentastrum:"[76] it is reproduced by layers, like the vine, or else by planting the branches upside down. It was the sweetness of its smell that caused this plant to change its name among the Greeks, its former name with them being "mintha," from which the ancient Romans derived their name[77] for it; whereas now, of late, it has been called by them ἡδύοσμον.[78] The mint that is used in the dishes at rustic entertainments pervades the tables far and wide with its agreeable odour. When once planted, it lasts a considerable length of time; it bears, too, a strong resemblance to pennyroyal, a property of which is, as mentioned by us more than once,[79] to flower when kept in our larders.

These other herbs, mint, I mean, and catmint, as well as pennyroyal, are all kept for use in a similar manner; but it is cummin[80] that is the best suited of all the seasoning herbs to squeamish and delicate stomachs. This plant grows on the surface of the soil, seeming hardly to adhere to it, and raising itself aloft from the ground: it ought to be sown in the middle of the summer, in a crumbly, warm soil, more particularly. There is another wild kind[81] of cummin, known by some persons as "rustic," by others as "Thebaic" cummin: bruised and drunk in water, it is good for pains in the stomach. The cummin most esteemed in our part of the world is that of Carpetania,[82] though elsewhere that of Africa and Æthiopia is more highly esteemed; with some, indeed, this last is preferred to that of Egypt.

CHAP. 48.—OLUSATRUM.

But it is olusatrum,[83] more particularly, that is of so singular

[76] Called by the Greeks καλαμίνθη, according to Apuleius.
[77] Or "Mentha." [78] "Sweet-smelling."
[79] "Sæpius." See B. xviii. c. 60.
[80] The Cuminum cyminum of botanists. See B. xx. c. 57.
[81] See B. xx. c. 57.
[82] In Hispania Tarraconensis. See B. iii. c. 4.
[83] Or "black-herb:" the herb Alexander, the Smyrnium olusatrum of Linnæus. See B. xx. c. 46.

a nature, a plant which by the Greeks is called "hipposelinum,"[84] and by others "smyrnium." This plant is reproduced from a tear-like gum[85] which exudes from the stem; it is also grown from the roots as well. Those whose business it is to collect the juice of it, say that it has just the flavour of myrrh; and, according to Theophrastus,[86] it is obtained by planting myrrh. The ancients recommended that hipposelinum should be grown in uncultivated spots covered with stones, and in the vicinity of garden walls; but at the present day it is sown in ground that has been twice turned up, between the prevalence of the west winds and the autumnal equinox.

The caper,[87] too, should be sown in dry localities more particularly, the plot being hollowed out and surrounded with an embankment of stones erected around it: if this precaution is not taken, it will spread all over the adjoining land, and entail sterility upon the soil. The caper blossoms in summer, and retains its verdure till the setting of the Vergiliæ; it thrives the best of all in a sandy soil. As to the bad qualities of the caper which grows in the parts beyond the sea, we have already[88] enlarged upon them when speaking of the exotic shrubs.

CHAP. 49.—THE CARAWAY.

The caraway[89] is an exotic plant also, which derives its name, "careum," from the country[90] in which it was first grown; it is principally employed for culinary purposes. This plant will grow in any kind of soil, and requires to be cultivated just the same way as olusatrum; the most esteemed, however, is that which comes from Caria, and the next best is that of Phrygia.

CHAP. 50.—LOVAGE.

Lovage[91] grows wild in the mountains of Liguria, its native

[84] "Horse-parsley."

[85] See B. xvii. c. 14, and B. xxi. c. 14.

[86] Hist. Plant. B. ix. c. 1. This story originated, no doubt, in the fancied resemblance of its smell to that of myrrh.

[87] The Capparis spinosa of Linnæus. See B. xiii. c. 44, also B. xx. c. 59.

[88] In B. xiii. c. 44.

[89] The Carum carvi of Linnæus.

[90] Caria, in Asia Minor.

[91] The Ligusticum levisticum of Linnæus.

country, but at the present day it is grown everywhere. The cultivated kind is the sweetest of the two, but is far from powerful; by some persons it is known as "panax." Crateuas, a Greek writer, gives this name, however, to the plant known to us as "cunila bubula;"[92] and others, again, call the conyza[93] or cunilago, cunila, while they call cunila,[94] properly so called, by the name of "thymbra." With us cunila has another appellation, being generally known as "satureia," and reckoned among the seasoning plants. It is usually sown in the month of February, and for utility rivals wild marjoram. These two plants are never used together, their properties being so extremely similar; but it is only the wild marjoram of Egypt that is considered superior to cunila.

CHAP. 51.—DITTANDER.

Dittander,[95] too, was originally an exotic plant: it is usually sown after the west winds have begun to prevail. As soon as it begins to shoot, it is cut down close to the ground, after which it is hoed and manured, a process which is repeated the succeeding year. After this, the shoots are fit for use, if the rigour of the winter has not injured them; for it is a plant quite unable to withstand any inclemency[96] of the weather. It grows to the height of a cubit, and has a leaf like that of the laurel,[97] but softer; it is never used except in combination with milk.

CHAP. 52.—GITH.

Gith[98] is employed by bakers, dill and anise by cooks and medical men. Sacopenium,[99] so extensively used for adulter-

[92] "Ox cunila." One of the Labiatæ, probably; but whether one of the Satureia or of the Thymbra is not known. See B. xx. cc. 60, 61.

[93] See B. xxi. c. 32.

[94] Scribonius Largus gives this name to savory, the Satureia hortensis of Linnæus. The whole of this passage is very confused, and its meaning is by no means clear.

[95] The Lepidium sativum of Linnæus. See B. xx. c. 70.

[96] It is an annual, in fact.

[97] Its leaf has no resemblance whatever to that of the laurel.

[98] The Nigella sativa of Linnæus. See B. xx. c. 71.

[99] Or sagapenum. See B. xx. c. 75. It is mentioned also in B. xii. c. 56, as being used for adulterating galbanum. As to laser, see c. 15 of the present Book.

ating laser, is also a garden plant, but is only employed for medicinal purposes.

CHAP. 53.—THE POPPY.

There are certain plants which are grown in company[1] with others, the poppy, for instance, sown with cabbages and purslain, and rocket with lettuce. Of the cultivated poppy[2] there are three kinds, the first being the white[3] poppy, the seed of which, parched, and mixed with honey, used to be served up in the second course at the tables of the ancients; at the present day, too, the country people sprinkle it on the upper crust of their bread, making it adhere by means of the yolk of eggs, the under crust being seasoned with parsley and gith to heighten the flavour of the flour. The second kind is the black[4] poppy, from which, upon an incision being made in the stalk, a milky juice distils; and the third is that known to the Greeks by the name of "rhœas;"[5] and by us as the wild poppy. This last grows spontaneously, but in fields, more particularly, which have been sown with barley: it bears a strong resemblance to rocket, grows to the height of a cubit, and bears a red flower, which quickly fades; it is to this flower that it is indebted for its Greek name.[6]

As to the other kinds of poppies which spring up spontaneously, we shall have occasion to speak of them when treating of the medicinal plants.[7] That the poppy has always been held in esteem among the Romans, we have a proof in the story related of Tarquinius[8] Superbus, who, by striking down the tallest poppies in his garden, surreptitiously conveyed,

1 This practice, as Fée remarks, is not followed; and indeed, unless it is intended to transplant them, it would be attended with injurious results to the young plants.

2 As to the poppy, for further particulars see B. xx. c. 76 and the Note.

3 The variety Album of the Papaver somniferum of modern botanists.

4 The variety Nigrum of the Papaver somniferum. The white poppy has also a milky juice.

5 The Papaver rhœas of modern botanists, the corn-poppy, or wild poppy. The seed of the poppy does not partake of the qualities of its capsular envelope, and at the present day it is extensively employed in the South of Europe for sprinkling over pastry.

6 "Rhœas," the "crimson," or "pomegranate" poppy.

7 See B. xx. cc. 76—79.

8 See c. 17 of this Book, also Ovid's Fasti, B. ii. l. 703, *et seq.*

unknown to them, his sanguinary message through the envoys who had been sent by his son.

CHAP. 54.—OTHER PLANTS WHICH REQUIRE TO BE SOWN AT THE AUTUMNAL EQUINOX.

There are some other plants, again, which require to be sown together at the time of the autumnal equinox; coriander, for instance, anise, orage, mallows, lapathum, chervil, known to the Greeks as "pæderos,"[9] and mustard,[10] which has so pungent a flavour, that it burns like fire, though at the same time it is remarkably wholesome for the body. This last, though it will grow without cultivation, is considerably improved by being transplanted; though, on the other hand, it is extremely difficult to rid the soil of it when once sown there, the seed when it falls germinating immediately. This seed, when cooked in the saucepan,[11] is employed even for making ragouts, its pungency being rendered imperceptible by boiling; the leaves, too, are boiled just the same way as those of other vegetables.

There are three different kinds of mustard,[12] the first of a thin, slender form, the second, with a leaf like that of the rape, and the third, with that of rocket: the best seed comes from Egypt. The Athenians have given mustard the name of "napy,"[13] others, "thapsi,"[14] and others, again, "saurion."[15]

CHAP. 55.—WILD THYME; SISYMBRIUM.

Most mountains abound with wild thyme and sisymbrium, those of Thrace, for example, where[16] branches of these wild plants are torn up and brought away for planting, So, too, the people of Sicyon seek for wild thyme on their mountains,

[9] "Lad's love."

[10] Black mustard, Fée thinks.

[11] He can hardly mean a pottage made of boiled mustard-seed alone, as Fée seems to think. If so, however, Fée no doubt is right in thinking that it would be intolerable to a modern palate.

[12] See B. xx. c. 87.

[13] Perhaps a corruption of its Greek name, σίνηπι.

[14] Hardouin suggests "thlaspi."

[15] Its bite being as sharp as the venom of the "saurus," or lizard.

[16] Hardouin, from Theophrastus, Hist. Plant. B. vi. c. 7, suggests a reading, "whence the streams bring down branches of them torn off, and so plant them."

and the Athenians on the slopes of Hymettus. Sisymbrium, too, is planted in a similar manner; it grows to the greatest perfection upon the walls of wells, and around fish preserves and ponds.[17]

CHAP. 56. (9.)—FOUR KINDS OF FERULACEOUS PLANTS. HEMP.

The other garden plants are of the ferulaceous kind, such as fennel, for instance, very grateful to serpents, as already stated,[18] and used for numerous seasonings when dried; thapsia, too, which bears a close resemblance to fennel, and already mentioned by us when speaking[19] of the exotic shrubs. Then, too, there is hemp,[20] a plant remarkably useful for making ropes, and usually sown after the west winds have begun to prevail: the more thickly it is sown, the thinner are the stalks. The seed is gathered when ripe, just after the autumnal equinox, and is dried by the agency of the sun, the wind, or smoke.[21] The hemp itself is plucked just after vintage-time, and is peeled and cleaned by the labourers at night.

The best hemp is that of Alabanda,[22] which is used more particularly for making hunting-nets, and of which there are three varieties. The hemp which lies nearest the bark or the pith is the least valuable, while that which lies in the middle, and hence has the name of "mesa," is the most esteemed. The hemp of Mylasa[23] occupies the second rank. With reference to the size to which it grows, that of Rosea,[23*] in the Sabine territory, equals the trees in height.[24]

We have already mentioned two kinds of fennel-giant when speaking[25] of the exotic shrubs: the seed of it is used in Italy for food; the plant, too, admits of being preserved, and, if stored in earthen pots, will keep for a whole year. There are

[17] The plants, Fée says, that we find in these localities, are nearly always ferns, or else Marchantia, or mosses of the genus Hypnum. Fée queries whether one of these may not have been the sisymbrium of Pliny. Water-cresses, again, have been suggested.

[18] In B. viii. c. 41. The Anæthum fœniculum of Linnæus.

[19] In B. xiii. c. 42.

[20] The Cannabis sativa of Linnæus. See B. xx. c. 97.

[21] Hemp-seed is never smoke-dried now.

[22] See B. v. c. 29. The same hemp is mentioned as being used for making hunting-nets, by Gratius, in the Cynegeticon.

[23] See B. v. c. 29. [23*] See B. iii. c. 17, and B. xvii. c. 3

[24] This, as Fée says, is no doubt erroneous. It is seldom known to attain a couple of inches in circumference. [25] In B. xiii. c. 42.

two parts of it that are used for this purpose, the upper stalks and the umbels of the plant. This kind of fennel is sometimes known by the name of "corymbia," and the parts preserved are called "corymbi."

CHAP. 57. (10.)—THE MALADIES OF GARDEN PLANTS.

The garden plants, too, like the rest of the vegetable productions, are subject to certain maladies. Thus, for[26] instance, ocimum, when old, degenerates into wild thyme, and sisymbrium[27] into mint, while the seed of an old cabbage produces rape, and vice versâ. Cummin, too, if not kept well hoed, is killed by hæmodorum,[28] a plant with a single stalk, a root similar to a bulb in appearance, and never found except in a thin, meagre soil. Besides this, cummin is liable to a peculiar disease of its own, the scab:[29] ocimum, too, turns pale at the rising of the Dog-star. All plants, indeed, will turn of a yellow complexion on the approach of a woman who has the menstrual discharge[30] upon her.

There are various kinds of insects,[31] too, that breed upon the garden plants—fleas, for instance, upon turnips, and caterpillars and maggots upon radishes, as well as lettuces and cabbages; besides which, the last two are exposed to the attacks of slugs and snails. The leek, too, is infested with peculiar insects of its own; which may very easily be taken, however, by laying dung upon the plants, the insects being in the habit of burrowing in it. Sabinus Tiro says, in his book entitled "Cepurica,"[32] which he dedicated to Mæcenas, that it is not advisable to touch rue, cunila, mint, or ocimum with any implement of iron.

[26] These absurd notions are borrowed from Theophrastus, De Causis, c. 8.

[27] See B. xx. c. 91.

[28] Or, according to some readings, "limodorum," a parasitical plant, probably the Lathræa phelypea of Sprengel. Fée suggests that this plant may be the Polygonum convolvulus of Linnæus, or else one of the Cuscutæ, or a variety of Orobanche.

[29] "Scabies." A fungous excrescence, Fee thinks, now known as "puccinia," or "uredo."

[30] See B. xvii. c. 47. Fée says that he has met with persons, in their sound senses, who obstinately defend the notion here mentioned by Pliny.

[31] See Theophrastus, Hist. Plant. B. vii. c. 5. Many of these insects, however, do not breed *upon* the plants, but are only attracted *to* them.

[32] "Book on Gardening."

CHAP. 58.—THE PROPER REMEDIES FOR THESE MALADIES. HOW ANTS ARE BEST DESTROYED. THE BEST REMEDIES AGAINST CATERPILLARS AND FLIES.

The same author recommends as a remedy against ants, which are by no means the slightest plague in a garden that is not kept well watered, to stop up the mouths of their holes with sea-slime or ashes. But the most efficient way of destroying them is with the aid of the plant heliotropium;[33] some persons, too, are of opinion that water in which an unburnt brick has been soaked is injurious to them. The best protection for turnips is to sow a few fitches with them, and for cabbages chick-peas, these having the effect of keeping away caterpillars. If, however, this precaution should have been omitted, and the caterpillars have already made their appearance, the best remedy is to throw upon the vegetables a decoction of wormwood,[34] or else of house-leek,[35] known to some as "aïzoüm," a kind of herb already mentioned by us. If cabbage-seed, before it is sown, is steeped in the juice of house-leek, the cabbages, it is said, are sure not be attacked by any insect.

It is said, too, that all caterpillars may be effectually exterminated, if the skull[37] of a beast of burden is set up upon a stake in the garden, care being taken to employ that of a female only. There is a story related, too, that a river crab, hung up in the middle of the garden, is a preservative against the attacks of caterpillars. Again, there are some persons who are in the habit of touching with slips of blood-red cornel[38] such plants as they wish to preserve from caterpillars. Flies,[39] too, infest well-watered gardens, and more particularly so, if there happen to be any shrubs there; they may be got rid of, however, by burning galbanum.[40]

(11.) With reference to the deterioration to which seed is subject,[41] there are some seeds which keep better than others,

[33] The Heliotropium Europæum of botanists. See B. xxii. c. 29.

[34] This may possibly, Fée says, be efficacious against some insects.

[35] See B. xviii. c. 45.

[37] A mere puerility, of course, though it is very possible that the insects may collect in it, and so be more easily taken. Garden-pots, on sticks, are still employed for this purpose.

[38] See B. xvi. c. 30.

[39] "Culices," including both flies and gnats, probably.

[40] See B. xii. c. 56.

[41] An almost literal translation of Theophrastus, Hist. Plant. B. vii. c. 6.

such, for instance, as that of coriander, beet, leeks, cresses, mustard, rocket, cunila, nearly all the pungent plants in fact. The seed, on the other hand, of orage, ocimum, gourds, and cucumbers, is not so good for keeping. All the summer seeds, too, last longer than the winter ones; but scallion seed is the very worst for keeping of them all. But of those, even, which keep the very longest, there is none that will keep beyond four years—for sowing[42] purposes, at least; for culinary purposes, they are fit for use beyond that period.

CHAP. 59.—WHAT PLANTS ARE BENEFITTED BY SALT WATER.

A peculiar remedy for the maladies to which radishes, beet, rue, and cunila are subject, is salt water, which has also the additional merit of conducing very materially to their sweetness and fertility. Other plants, again, are equally benefitted by being watered with fresh water, the most desirable for the purpose being that which is the coldest and the sweetest to drink: pond and drain-water, on the other hand, are not so good, as they are apt to carry the seeds of weeds along with them. It is rain,[43] however, that forms the principal aliment of plants; in addition to which, it kills the insects as they develope themselves upon them.

CHAP. 60. (12.)—THE PROPER METHOD OF WATERING GARDENS.

The proper times[44] for watering are the morning and the evening, to prevent the water from being heated[45] by the sun; with the sole exception, however, of ocimum, which requires to be watered at midday; indeed, this plant, it is generally thought, will grow with additional rapidity, if it is watered with boiling water when sown. All plants, when trans-

[42] This is certainly not true with reference to the leguminous and gramineous plants. It is pretty generally known as a fact, that wheat has germinated after being buried in the earth two thousand years: mummy-wheat, at the present day, is almost universally known.

[43] Rain-water, if collected in cisterns, and exposed to the heat of the sun, is the most beneficial of all; rain has the effect also of killing numerous insects which have bred in the previous drought.

[44] From Theophrastus, B. vii. c. 5. Evening is generally preferred to morning for this purpose; the evaporation not being so quick, and the plant profiting more from the water.

[45] It should, however, be of a middling temperature, and warmed to some extent by the rays of the sun.

planted, grow all the better and larger for it, leeks and turnips more particularly. Transplanting, too, is attended with certain remedial effects, and acts as a preservative to certain plants, such as scallions, for instance, leeks, radishes, parsley, lettuces, rape, and cucumbers. All the wild plants[46] are generally smaller in the leaf and stalk than the cultivated ones, and have more acrid juices, cunila, wild marjoram, and rue, for example. Indeed, it is only the lapathum[47] that is better in a wild state than cultivated: in its cultivated state it is the same plant that is known to us as the "rumix," being the most vigorous[48] by far of all the plants that are grown; so much so, indeed, that it is said that when it has once taken root, it will last for ever, and can never be extirpated from the soil, more particularly if water happens to be near at hand. Its juices, which are employed only in ptisans,[49] as an article of food, have the effect of imparting to them a softer and more exquisite flavour. The wild variety[50] is employed for many medicinal purposes.

So true it is, that the careful research of man has omitted nothing, that I have even met with a poem,[51] in which I find it stated, that if pellets of goats' dung, the size of a bean, are hollowed out, and the seed of leeks, rocket, lettuces, parsley, endive, and cresses is inserted in them, and then sown, the plants will thrive in a marvellous degree. Plants[52] in a wild state, it is generally thought, are more dry and acrid than when cultivated.

CHAP. 61.—THE JUICES AND FLAVOURS OF GARDEN HERBS.

This, too, reminds me that I ought to make some mention of the difference between the juices and flavours of the garden herbs, a difference which is more perceptible here than in the fruits even.[53] In cunila, for instance, wild marjoram, cresses, and mustard, the flavour is acrid; in wormwood[54] and cen-

[46] These statements are consistent with modern experience.

[47] See B. xx. c. 85.

[48] He says this probably in reference partly to the large leaves which characterize the varieties of dock.

[49] Dishes made of rice or barley. See B. xviii. c. 13.

[50] See B. xx. c. 85.

[51] He does not give the name of the poet, but, as Fée says, we do not experience any great loss thereby.

[52] From Theophrastus, Hist. Plant. B. vii. c. 6.

[53] See B. xv. c. 32.

[54] "Absinthium." See B. xxvii. c. 28.

taury,[55] bitter; in cucumbers, gourds, and lettuces, watery; and in parsley, anise, and fennel, pungent and odoriferous. The salt flavour is the only one that is not to be found[56] in plants, with the sole exception, indeed, of the chicheling[57] vetch, though even then it is to be found on the exterior surface only of the plant, in the form of a kind of dust which settles there.

CHAP. 62.—PIPERITIS, LIBANOTIS, AND SMYRNIUM.

To come to a full understanding, too, both here as elsewhere, how unfounded are the notions which are generally entertained, I shall take this opportunity of remarking that panax[58] has the flavour of pepper, and siliquastrum even more so, a circumstance to which it owes its name of piperitis:[59] libanotis,[60] again, has just the odour of frankincense, and smyrnium[61] of myrrh. As to panax, we have spoken of it at sufficient length already.[62] Libanotis grows in a thin, crumbly soil, and is generally sown in spots exposed to the falling dews; the root, which is just like that of olusatrum,[63] has a smell in no way differing from that of frankincense; when a year old, it is extremely wholesome for the stomach; some persons give it the name of rosmarinum.[64] Smyrnium is a garden herb that grows in similar soils, and has a root which smells like myrrh: siliquastrum, too, is grown in a similar manner.

Other plants, again, differ from the preceding ones, both in smell and taste, anise[65] for example; indeed, so great is the difference in this respect, and in their relative virtues, that not only are the properties of each modified by the other, but quite neutralized even. It is in this way that our cooks correct the flavour of vinegar in their dishes with parsley, and our butlers employ the same plant, enclosed in sachets, for removing a bad odour in wine.

[55] See B. xxv. c. 30.

[56] Fée remarks, that though rarely to be met with, the salt flavour is still to be found in the vegetable kingdom.

[57] The "cicercula," or Lathyrus sativus of Linnæus. See B. xviii. c. 32.

[58] See B. xii. c. 57.

[59] Or pepper-wort. See B. xx. c. 66.

[60] See B. xx. c. 54.

[61] The same, probably, as olusatrum. See cc. 37 and 48 of this Book, and B. xx. c. 46: also B. xxvii. c. 109.

[62] In B. xii. c. 57.

[63] See c. 48 of this Book.

[64] Rosemary, or "sea-dew."

[65] See B. xx. c. 74.

[66]Thus far, then, we have treated of the garden plants, viewed as articles of food only; it remains for us now (for up to the present we have only spoken of their various methods of cultivation, with some succinct details relative thereto), to enlarge upon the more elaborate operations of Nature in this respect; it being quite impossible to come to a full understanding as to the true characteristics of each individual plant, without a knowledge of its medicinal effects, a sublime and truly mysterious manifestation of the wisdom of the Deity, than which nothing can possibly be found of a nature more elevated. It is upon principle that we have thought proper not to enlarge upon the medicinal properties of each plant when treating of it; for it is a quite different class of persons that is interested in knowing their curative properties, and there is no doubt that both classes of readers would have been inconvenienced in a very material degree, if these two points of view had engaged our attention at the same moment. As it is, each class will have its own portion to refer to, while those who desire to do so, will experience no difficulty in uniting them, with reference to any subject of which we may happen to treat.

SUMMARY.—Remarkable facts, narratives, and observations, one thousand one hundred and forty-four.

ROMAN AUTHORS QUOTED.—Maccius Plautus,[67] M. Varro,[68] D. Silanus,[69] Cato the Censor,[70] Hyginus,[71] Virgil,[72] Mucianus,[73] Celsus,[74] Columella,[75] Calpurnius Bassus,[76] Mamilius Sura,[77] Sabinus Tiro,[78] Licinius Macer,[79] Quintus Hirtius,[80] Vibius

[66] Fée suggests, though apparently without any good reason, that this paragraph, to the end of the Book, is an interpolation of the copyists.

[67] See end of B. xiv.
[68] See end of B. ii.
[69] See end of B. xiv.
[70] See end of B. iii.
[71] See end of B. iii.
[72] See end of B. vii.
[73] See end of B. ii.
[74] See end of B. vii.
[75] See end of B. viii.
[76] See end of B. xvi.
[77] See end of B. x.

[78] Beyond the mention made of this writer in c. 57, nothing whatever is known of him.

[79] C. Licinius Macer, a Roman annalist and orator, born about B.C. 110. Upon being impeached by Cicero, he committed suicide. He wrote a History or Annals of Rome, which are frequently referred to by Livy and Dionysius of Halicarnassus.

[80] Nothing whatever appears to be known of this writer.

Rufus,[81] Cæsennius[82] who wrote the Cepurica, Castritius[83] who wrote on the same subject, Firmus[84] who wrote on the same subject, Petrichus[85] who wrote on the same subject.

FOREIGN AUTHORS QUOTED. — Herodotus,[86] Theophrastus,[87] Democritus,[88] Aristomachus,[89] Menander[90] who wrote the Biochresta, Anaxiläus.[91]

[81] See end of B. xiv.

[82] Nothing whatever is known relative to this writer on Horticulture.

[83] Nothing certain is known of him; but it has been suggested that he may have been the father of the rhetorician Castritius, so often mentioned by Aulus Gellius, and who lived in the time of the Emperor Adrian.

[84] Nothing whatever is known relative to this writer.

[85] The author of a Greek poem on venomous serpents, mentioned in B. xx. c. 96, and B. xxii. c. 40, and by the Scholiast on the Theriaca of Nicander.

[86] See end of B. ii.

[87] See end of B. iii.

[88] See end of B. ii.

[89] See end of B. xi.

[90] Nothing whatever is known of him. His Book seems to have been a compendium of "Things useful to life."

[91] A physician and Pythagorean philosopher, born at one of the cities called Larissa, but which, is now unknown. He was banished by the Emperor Augustus, B.C. 28, on the charge of practising magic, a charge probably based on his superior skill in natural philosophy. He is frequently mentioned by Pliny in the course of this work.

BOOK XX.

REMEDIES DERIVED FROM THE GARDEN PLANTS.

CHAP. 1.—INTRODUCTION.

We are now about to enter upon an examination of the greatest of all the operations of Nature—we are about to discourse to man upon his aliments,[1] and to compel him to admit that he is ignorant by what means he exists. And let no one, misled by the apparent triviality of the names which we shall have to employ, regard this subject as one that is frivolous or contemptible: for we shall here have to set forth the state of peace or of war which exists between the various departments of Nature, the hatreds or friendships which are maintained by objects dumb and destitute of sense, and all, too, created—a wonderful subject for our contemplation!—for the sake of man alone. To these states, known to the Greeks by the respective appellations "sympathia" and "antipathia," we are indebted for the first principles[2] of all things; for hence it is that water has the property of extinguishing fire, that the sun absorbs water, that the moon produces it, and that each of those heavenly bodies is from time to time eclipsed by the other.

Hence it is, too, descending from the contemplation of a loftier sphere, that the loadstone[3] possesses the property of at-

[1] Fée remarks, that the commencement of this exordium is contrary to truth, and that Pliny appears to forget that in the Eighteenth Book he has treated, at very considerable length, of the various cereals, the art of preparing bread, pottages, ptisans, &c. He suggests, that the author may have originally intended to place the Eighteenth Book *after* the present one, and that on changing his plan he may have neglected to alter the present passage. From his mention, however, of man's "ignorance by what means he exists," it is not improbable that he may have considered that the nutritive qualities of plants are really based upon their medicinal virtues, a point of view little regarded by the majority of mankind in his time, but considered by Pliny to be the true key to a just appreciation of their utility.

[2] "Quibus cuncta constant." See B. xxiv. c. 1.

[3] See B. xxxiv. c. 42.

tracting iron, and another stone,[4] again, that of repelling it: and that the diamond, that pride of luxury and opulence, though infrangible by every other object, and presenting a resistance that cannot be overcome, is broken asunder by a he-goat's blood[5]—in addition to numerous other marvels of which we shall have to speak on more appropriate occasions, equal to this or still more wonderful even. My only request is that pardon may be accorded me for beginning with objects of a more humble nature, though still so greatly conducive to our health—I mean the garden plants, of which I shall now proceed to speak.

CHAP. 2. (1.)—THE WILD CUCUMBER; TWENTY-SIX REMEDIES.

We have already stated[6] that there is a wild cucumber, considerably smaller than the cultivated one. From this cucumber the medicament known as "elaterium" is prepared, being the juice extracted from the seed.[7] To obtain this juice the fruit is cut before it is ripe—indeed, if this precaution is not taken at an early period, the seed is apt to spirt[8] out and be productive of danger to the eyes. After it is gathered, the fruit is kept whole for a night, and on the following day an incision is made in it with a reed. The seed, too, is generally sprinkled with ashes, with the view of retaining in it as large a quantity of the juice as possible. When the juice is extracted, it is received in rain water, where it falls to the bottom; after which it is thickened in the sun, and then divided into lozenges,

[4] The "theamedes." See B. xxxvi. c. 25.

[5] Pliny is the only author who makes mention of this singularly absurd notion.

[6] In B. xix. c. 24: so, too, Dioscorides, B. iv. c. 154. The wild cucumber of Pliny, as Fée observes, is in reality not a cucumber, but a totally different plant, the Cucumis silvestris asininus of C. Bauhin, the Momordica elaterium of Linnæus, or squirting cucumber.

[7] Elaterium, Fée says, is not extracted from the seed, but is the juice of the fruit itself, as Pliny, contradicting himself, elsewhere informs us. Theophrastus commits the same error, which Dioscorides does not; and it is not improbable that Pliny has copied from two sources the method of making it.

[8] Meaning the juice and seed combined, probably. Fée thinks that it is to this the medicament owes its name, from ἐλάυνω, to "drive" or "impel." It is much more probable, however, that the medicine was so called from its strong purgative powers; for, as Galen tells us, ἐλατήριον was a name given to purgative medicines in general.

which are of singular utility to mankind for healing dimness[9] of sight, diseases of the eyes, and ulcerations of the eyelids. It is said that if the roots of a vine are touched with this juice, the grapes of it will be sure never to be attacked by birds.

The root,[10] too, of the wild cucumber, boiled in vinegar, is employed in fomentations for the gout, and the juice of it is used as a remedy for tooth-ache. Dried and mixed with resin, the root is a cure for impetigo[11] and the skin diseases known as "psora"[12] and "lichen:"[13] it is good, too, for imposthumes of the parotid glands and inflammatory tumours,[14] and restores the natural colour to the skin when a cicatrix has formed.—The juice of the leaves, mixed with vinegar, is used as an injection for the ears, in cases of deafness.

CHAP. 3.—ELATERIUM; TWENTY-SEVEN REMEDIES.

The proper season for making elaterium is the autumn; and there is no medicament known that will keep longer than this.[15] It begins to be fit for use when three years old; but if it is found desirable to make use of it at an earlier period than this, the acridity of the lozenges may be modified by putting them with vinegar upon a slow fire, in a new earthen pot. The older it is the better, and before now, as we learn from Theophrastus, it has been known to keep[15] so long as two hundred years. Even after it has been kept so long as fifty[16] years, it retains its property of extinguishing a light; indeed,

[9] Dioscorides, B. iv. c. 154, states to this effect. Fée remarks that, singularly enough, most of the antiophthalmics used by the ancients, were composed of acrid and almost corrosive medicaments, quite in opposition to the sounder notions entertained on the subject by the moderns.

[10] Dioscorides says the same; and much the same statements are made by Celsus, Apuleius, Marcellus Empiricus, and Plinius Valerianus. The different parts of the plant, dried, have but very feeble properties, Fée says.

[11] A sort of tetter or ring-worm. Celsus enumerates four varieties.

[12] Itch-scab, probably.

[13] A disease of the skin, in which the scab assumes the form almost of a lichen or moss.

[14] "Panos." "Panus" was the name given to a wide-spreading, but not deeply-seated, tumour, the surface of which presented a blistered appearance.

[15] Fée says that this is not the fact, as it speedily deteriorates by keeping.

[16] From Theophrastus, Hist. Plant. B. ix. c. 10.

it is the proper way of testing the genuineness of the drug to hold it to the flame and make it scintillate above and below, before finally extinguishing it. The elaterium which is pale, smooth, and slightly bitter, is superior[17] to that which has a grass-green appearance and is rough to the touch.

It is generally thought that the seed of this plant will facilitate conception if a woman carries it attached to her person, before it has touched the ground; and that it has the effect of aiding parturition, if it is first wrapped in ram's wool, and then tied round the woman's loins, without her knowing it, care being taken to carry it out of the house the instant she is delivered.

Those persons who magnify the praises of the wild cucumber say that the very best is that of Arabia, the next being that of Arcadia, and then that of Cyrenæ: it bears a resemblance to the heliotropium,[18] they say, and the fruit, about the size of a walnut, grows between the leaves and branches. The seed, it is said, is very similar in appearance to the tail of a scorpion thrown back, but is of a whitish hue. Indeed, there are some persons who give to this cucumber the name of "scorpionium," and say that its seed, as well as the elaterium, is remarkably efficacious as a cure for the sting of the scorpion. As a purgative, the proper dose of either is from half an obolus to an obolus, according to the strength of the patient, a larger dose than this being fatal.[19] It is in the same proportions, too, that it is taken in drink for phthiriasis[20] and dropsy; applied externally with honey or old olive oil, it is used for the cure of quinsy and affections of the trachea.

CHAP. 4. (2.)—THE ANGUINE OR ERRATIC CUCUMBER: FIVE REMEDIES.

Many authors are of opinion that the wild cucumber is identical with the plant known among us as the "anguine," and by some persons as the "erratic"[21] cucumber. Objects

[17] Fée acknowledges the truth of this observation, that of a green colour containing feculent matter, and showing that the juice is not pure.

[18] In reality there is no such resemblance whatever. See B. xxii. c. 29.

[19] Fée says that this is an exaggerated account of the properties of the wild cucumber, as it would require a very considerable dose to cause death.

[20] The Morbus pedicularis, or "lousy disease."

[21] This has been identified by some writers, Fée says, with the Cucumis flexuosus of Linnæus; but, as he observes, that plant comes originally

sprinkled with a decoction of this plant will never be touched by mice. The same authors[22] say, too, that a decoction of it in vinegar, externally applied, gives instantaneous relief in cases of gout and diseases of the joints. As a remedy, too, for lumbago, the seed of it is dried in the sun and pounded, being given in doses of twenty denarii to half a sextarius of water. Mixed with woman's milk and applied as a liniment, it is a cure for tumours which have suddenly formed.

Elaterium promotes the menstrual discharge; but if taken by females when pregnant, it is productive of abortion. It is good, also, for asthma, and, injected into the nostrils, for the jaundice.[23] Rubbed upon the face in the sun, it removes freckles[24] and spots upon the skin.

CHAP. 5.—THE CULTIVATED CUCUMBER: NINE REMEDIES.

Many persons attribute all these properties to the cultivated cucumber[25] as well, a plant which even without them would be of very considerable importance, in a medicinal point of view. A pinch of the seed, for instance, in three fingers, beaten up with cummin and taken in wine, is extremely beneficial for a cough: for phrenitis, also, doses of it are administered in woman's milk, and doses of one acetabulum for dysentery. As a remedy for purulent expectorations, it is taken with an equal quantity of cummin;[26] and it is used with hydromel for diseases of the liver. Taken in sweet wine, it is a diuretic; and, in combination with cummin,[26] it is used as an injection for affections of the kidneys.

from India, and it is more than probable that it was not known by the ancients; in addition to which, it is possessed of no medicinal properties whatever. He looks upon it as an indigenous plant not identified.

22 So Dioscorides, B. iv. c. 154.

23 "Morbus regius;" literally, the "royal disease."

24 "Lentigo."

25 See B. xix. c. 23. It is but little appreciated for its medicinal properties by the moderns. Emulsions are sometimes made of the seeds, which are of an oily nature. Fée says that the French ladies esteem pommade of cucumber as an excellent cosmetic; which is, however, an erroneous notion.

26 The combination of cummin with cucumber seed is in opposition, Fée remarks, with their medicinal properties, the one being soothing, and the other moderately exciting.

CHAP. 6.—PEPONES: ELEVEN REMEDIES.

The fruit known as pepones[27] are a cool and refreshing diet, and are slightly relaxing to the stomach. Applications are used of the pulpy flesh in defluxions or pains of the eyes. The root, too, of this plant cures the hard ulcers known to us as "ceria," from their resemblance to a honeycomb, and it acts as an emetic.[28] Dried and reduced to a powder, it is given in doses of four oboli in hydromel, the patient, immediately after taking it, being made to walk half a mile. This powder is employed also in cosmetics[29] for smoothing the skin. The rind, too, has the effect[30] of promoting vomiting, and, when applied to the face, of clearing the skin; a result which is equally produced by an external application of the leaves of all the cultivated cucumbers. These leaves, mixed with honey, are employed for the cure of the pustules known as "epinyctis;"[31] steeped in wine, they are good, too, for the bites of dogs and of multipedes,[32] insects known to the Greeks by the name of "seps,"[33] of an elongated form, with hairy legs, and noxious to cattle more particularly; the sting being followed by swelling, and the wound rapidly putrifying.

The smell of the cucumber itself is a restorative[34] in fainting fits. It is a well-known fact, that if cucumbers are peeled and then boiled in oil, vinegar, and honey, they are all the more pleasant eating[35] for it.

[27] As to the several varieties of the pumpkin or gourd, known under this name, see B. xix. c. 24.

[28] Dioscorides states to the same effect, and, as Fée thinks, with a probability of being correct.

[29] "Smegmata."

[30] This assertion, Fée says, is utterly untrue.

[31] From *ἐπί*, "upon," and *νὺξ*, "night." These are red or whitish pustules, accompanied with sharp pains, which appear on the skin at night, and disappear in the day-time. See c. 21.

[32] Or "many-legs." See B. xxix. c. 39. Probably one of our millepedes or centipedes: though Fée suggests that it may have been a large caterpillar

[33] From *σηπεῖν*. "to rot."

[34] This, Fée says, is untrue: but it is hard to say on what grounds he himself asserts that the smell of the cucumber is faint, and almost nauseous.

[35] This, probably, is not conformable to modern notions on the subject.

CHAP. 7. (3.)—THE GOURD: SEVENTEEN REMEDIES. THE SOMPHUS: ONE REMEDY.

There is found also a wild gourd, called "somphos" by the Greeks, empty within (to which circumstance it owes its name),[36] and long and thick in shape, like the finger: it grows nowhere except upon stony spots. The juice of this gourd, when chewed, is very beneficial to the stomach.[37]

CHAP. 8.—THE COLOCYNTHIS: TEN REMEDIES.

There is another variety of the wild gourd, known as the "colocynthis:"[38] this kind is full of seeds, but not so large as the cultivated one. The pale colocynthis is better than those of a grass-green colour. Employed by itself when dried, it acts as a very powerful[39] purgative; used as an injection, it is a remedy for all diseases of the intestines, the kidneys, and the loins, as well as for paralysis. The seed being first removed, it is boiled down in hydromel to one half; after which it is used as an injection, with perfect safety, in doses of four oboli. It is good, too, for the stomach, taken in pills composed of the dried powder and boiled honey. In jaundice seven seeds of it may be taken with beneficial effects, with a draught of hydromel immediately after.

The pulp of this fruit, taken with wormwood and salt, is a remedy for toothache, and the juice of it, warmed with vinegar, has the effect of strengthening loose teeth. Rubbed in with oil, it removes pains of the spine, loins, and hips: in addition to which, really a marvellous thing to speak of! the seeds of it, in even numbers, attached to the body in a linen cloth, will cure, it is said, the fevers to which the Greeks have given the name of "periodic."[40] The juice, too, of the cultivated

[36] From the Greek σομφὸς, porous, spongy, or hollow.

[37] It is supposed by some naturalists that this gourd is the variety Pyxidaris of the Cucurbita pepo of Linnæus, the Colocynthis amara of C. Bauhin. Fée remarks, however, that this designation is arbitrary; as this plant never grows wild in Europe, and its pulp is so bitter, that instead of proving beneficial to the stomach, it would cause vomiting. From the fact of its comparison to the human finger, he doubts if it really was one of the Cucurbitæ at all.

[38] The Cucumis colocynthus of Linnæus, or Coloquintida, so remarkable for its bitterness.

[39] It is an extremely drastic, and indeed violent purgative.

[40] Recurring at stated times. The absurdity of this statement does not require discussion.

gourd[41] shred in pieces, applied warm, is good for ear-ache, and the flesh of the inside, used without the seed, for corns on the feet and the suppurations known to the Greeks as "apostemata."[42] When the pulp and seeds are boiled together, the decoction is good for strengthening loose teeth, and for preventing toothache; wine, too, boiled with this plant, is curative of defluxions of the eyes. The leaves of it, bruised with fresh cypress-leaves, or the leaves alone, boiled in a vessel of potters' clay and beaten up with goose-grease, and then applied to the part affected, are an excellent cure for wounds. Fresh shavings of the rind are used as a cooling application for gout, and burning pains in the head, in infants more particularly; they are good, too, for erysipelas,[43] whether it is the shavings of the rind or the seeds of the plant that are applied to the part affected. The juice of the scrapings, employed as a liniment with rose-oil and vinegar, moderates the burning heats of fevers; and the ashes of the dried fruit applied to burns are efficacious in a most remarkable degree.

Chrysippus, the physician, condemned the use of the gourd as a food: it is generally agreed, however, that it is extremely good[44] for the stomach, and for ulcerations of the intestines and of the bladder.

CHAP. 9.—RAPE; NINE REMEDIES.

Rape, too, has its medicinal properties. Warmed, it is used as an application for the cure of chilblains,[45] in addition to which, it has the effect of protecting the feet from cold. A hot decoction of rape is employed for the cure of cold gout; and raw rape, beaten up with salt, is good for all maladies of the feet. Rape-seed, used as a liniment, and taken in drink, with wine, is said to have a salutary effect[46] against the stings of serpents,

[41] The cultivated cucumber, Fee says.

[42] Or "aposthumes," a kind of abscess, probably.

[43] "Ignis sacer," literally "sacred fire." It is sometimes called "St. Anthony's fire." Celsus, in describing it, distinguishes it, however, from erysipelas, and divides it into two kinds.

[44] On the contrary, Fée says, the pulp of the gourd is tough and leathery, extremely insipid, and destitute of any salutary qualities.

[45] A decoction of rape or turnips is still recommended for chilblains at the present day. Fée remarks that ground mustard is much preferable.

[46] This, as Fée remarks, he says of nearly all the vegetable productions known.

and various narcotic poisons; and there are many persons who attribute to it the properties of an antidote, when taken with wine and oil.

Democritus has entirely repudiated the use of rape as an article of food, in consequence of the flatulence[47] which it produces; while Diocles, on the other hand, has greatly extolled it, and has even gone so far as to say that it acts as an aphrodisiac.[48] Dionysius, too, says the same of rape, and more particularly if it is seasoned with rocket;[49] he adds, also, that roasted, and then applied with grease, it is excellent for pains in the joints.

CHAP. 10.—WILD RAPE: ONE REMEDY.

Wild rape[50] is mostly found growing in the fields; it has a tufted top, with a white[51] seed, twice as large as that of the poppy. This plant is often employed for smoothing the skin of the face and the body generally, meal of fitches,[52] barley, wheat, and lupines, being mixed with it in equal proportions.

The root of the wild rape is applied to no useful purpose whatever.

CHAP. 11. (4.)—TURNIPS; THOSE KNOWN AS BUNION AND BUNIAS: FIVE REMEDIES.

The Greeks distinguish two kinds of turnips,[53] also, as employed in medicine. The turnip with angular stalks and a flower like that of anise, and known by them as "bunion,"[54] is

[47] It is only suited as an aliment to a strong stomach, and it is owing to the property here mentioned that the School of Salerno says,—

Ventum sæpe capis, si tu vis vivere rapis.

and

Rapa juvat stomachum, novit producere ventum.

[48] Dioscorides and Galen say the same, but this property is not recognized in modern times.

[49] "Eruca:" a plant itself of a very stimulating nature.

[50] The Brassica napus, var. *a* of Linnæus, the Brassica asperifolia, var. *a* of Decandolles, the "navette" of the French. An oil is extracted from the seed, very similar to the Colza oil, extracted from the Brassica oleracea.

[51] It is in reality of a blackish hue without, and white within.

[52] See B. xxii. c. 73. Dioscorides speaks of the use of the wild rape for this purpose, B. ii. c. 135.

[53] See B. xviii. c. 35, and B. xix. c. 25.

[54] Dalechamps remarks that Pliny here confounds the bunion with the bunias; the first of which, as Fee says, is an umbellifera, either the Bun-

good for promoting the menstrual discharge in females and for affections[55] of the bladder; it acts, also, as a diuretic. For these purposes, a decoction of it is taken with hydromel, or else one drachma of the juice of the plant.[56] The seed, parched, and then beaten up, and taken in warm water, in doses of four cyathi, is a good remedy for dysentery; it will stop the passage of the urine, however, if linseed is not taken with it.

The other kind of turnip is known by the name of "bunias,"[57] and bears a considerable resemblance to the radish and the rape united, the seed of it enjoying the reputation of being a remedy for poisons; hence it is that we find it employed in antidotes.

CHAP. 12.—THE WILD RADISH, OR ARMORACIA: ONE REMEDY.

We have already said,[58] that there is also a wild radish.[59] The most esteemed is that of Arcadia, though it is also found growing in other countries as well. It is only efficacious as a diuretic, being in other respects of a heating nature. In Italy, it is known also by the name of "armoracia."

CHAP. 13.—THE CULTIVATED RADISH: FORTY-THREE REMEDIES.

The cultivated radish, too, in addition to what we have already said[60] of it, purges the stomach, attenuates the phlegm, acts as a diuretic, and detaches the bilious secretions. A decoction of the rind of radishes in wine, taken in the morning in doses of three cyathi, has the effect of breaking and expelling calculi of the bladder. A decoction, too, of this rind in vinegar and water, is employed as a liniment for the stings of serpents. Taken fasting in the morning with honey, radishes are good[61] for a cough. Parched radish-seed, as well as

ium bulbocastanum of Linnæus, or the Peucedanum silaus of Linnæus, and the second is the Brassica napo-brassica of Linnæus. Dioscorides says that the stalks of the bunion are quadrangular. M. Fraas thinks that the bunion is the Bunium pumilum of modern Botany, and says that the Bunium bulbocastanum, usually supposed to be the bunion of Dioscorides, is a stranger to Greece.

[55] These properties, Fée says, are not to be found in the Bunium bulbocastanum of modern botanists.

[56] Sillig is of opinion that there is an hiatus here in the text, and that the meaning is that a drachma of the juice is taken with something else: honey possibly, he suggests.

[57] The Brassica napo-brassica of Linnæus.

[58] See B. xix c. 26.

[59] The Cochlearia Armoracia of Linnæus.

[60] In B. xix. c. 26.

[61] Fée says that the medicinal properties recognized by the moderns in

radishes themselves, chewed, is useful for pains in the sides.[62] A decoction of the leaves, taken in drink, or else the juice of the plant taken in doses of two cyathi, is an excellent remedy for phthiriasis. Pounded radishes, too, are employed as a liniment for inflammations[63] under the skin, and the rind, mixed with honey, for bruises of recent date. Lethargic persons[64] are recommended to eat them as hot as possible, and the seed, parched and then pounded with honey, will give relief to asthmatic patients.

Radishes, too, are useful as a remedy for poisons, and are employed to counteract the effects of the sting of the cerastes[65] and the scorpion: indeed, after having rubbed the hands with radishes or radish-seed, we may handle[66] those reptiles with impunity. If a radish is placed upon a scorpion, it will cause its death. Radishes are useful, too, in cases of poisoning by fungi[67] or henbane; and according to Nicander,[68] they are salutary against the effects of bullock's blood,[69] when drunk. The two physicians of the name of Apollodorus, prescribe radishes to be given in cases of poisoning by mistletoe; but whereas Apollodorus of Citium recommends radish-seed pounded in water, Apollodorus of Tarentum speaks of the juice. Radishes diminish the volume of the spleen, and are beneficial for maladies of the liver and pains in the loins: taken, too, with vinegar or mustard, they are good for dropsy and lethargy,

the several varieties of the Raphanus sativus are, that their action is slightly stimulating when eaten raw, and that boiled and eaten with sugar they are soothing, and act as a pectoral.

62 "Lagonoponon." Nearly all these asserted virtues of the radish, Fée says, are illusory.

63 "Phlegmoni." Stagnation of the blood, with heat, redness, swelling, and pain.

64 "Veternosi." Fée says that, rigorously speaking, "veternus" was that state of somnolency which is the prelude to apoplexy.

65 The Coluber cerastes of Linnæus. See B. viii. c. 35.

66 Poinsinet warns us not to place too implicit faith in this assertion.

67 Dioscorides says the same, but the assertion is quite destitute of truth.

68 Nicander, in his "Alexipharmaca," ll. 430 and 527, says that the cabbage, *not* the radish, is good for poisoning by fungi and henbane; and in l. 300 he states that the cabbage is similarly beneficial against the effects of bullock's blood. Pliny has probably fallen into the error by confounding ῥαφάνος, the "cabbage," with ῥαφάνις, the "radish."

69 Themistocles is said to have killed himself by taking hot bullock's blood. It is, however, very doubtful.

as well as epilepsy[70] and melancholy.[71] Praxagoras recommends that radishes should be given for the iliac passion, and Plistonicus for the cœliac[72] disease.

Radishes are good, too, for curing ulcerations of the intestines and suppurations of the thoracic organs,[73] if eaten with honey. Some persons say, however, that for this purpose they should be boiled in earth and water; a decoction which, according to them, promotes the menstrual discharge. Taken with vinegar or honey, radishes expel worms from the intestines; and a decoction of them boiled down to one-third, taken in wine, is good for intestinal hernia.[74] Employed in this way, too, they have the effect of drawing off the superfluous blood. Medius recommends them to be given boiled to persons troubled with spitting of blood, and to women who are suckling, for the purpose of increasing the milk. Hippocrates[75] recommends females whose hair falls off, to rub the head with radishes, and he says that for pains of the uterus, they should be applied to the navel.

Radishes have the effect, too, of restoring the skin, when scarred, to its proper colour; and the seed, steeped in water, and applied topically, arrests the progress of ulcers known as phagedænic.[76] Democritus regards them, taken with the food, as an aphrodisiac; and it is for this reason, perhaps, that some persons have spoken of them as being injurious to the voice. The leaves, but only those of the long radish, are said to have the effect of improving the eye-sight.

When radishes, employed as a remedy, act too powerfully, it is recommended that hyssop should be given immediately; there being an antipathy[77] between these two plants. For

[70] "Morbus comitialis"—literally the "comitial disease." Epilepsy it is said, was so called because, if any person was seized with it at the "Comitia," or public assemblies of the Roman people, it was the custom to adjourn the meeting to another day.

[71] From μέλας, "black," and χολή, "bile." Melancholy, or bad spirits, was so called from a notion that it was owing to a predominance of an imaginary secretion called by the ancients "black bile."

[72] The cœliac flux, Fée says, is symptomatic of chronic enteritis; and is a species of diarrhœa, in which the chyme is voided without undergoing any change in passing through the intestines.

[73] "Præcordiorum." [74] "Enterocele."

[75] De Morb. Mulier. B. ii. c. 67.

[76] Eating or corroding ulcers.

[77] Hippocrates, De Diætâ, B. ii. cc. 25, 26, says that radishes are of a cold, and hyssop of a warm, nature.

dulness of hearing, too, radish-juice is injected into the ear. To promote vomiting, it is extremely beneficial to eat radishes fasting.

CHAP. 14.—THE PARSNIP: FIVE REMEDIES. THE HIBISCUM, WILD MALLOW, OR PLISTOLOCHIA: ELEVEN REMEDIES.

The hibiscum, by some persons known as the wild mallow,[78] and by others as the "plistolochia," bears a strong resemblance to the parsnip;[79] it is good for ulcerations of the cartilages, and is employed for the cure of fractured bones. The leaves of it, taken in water, relax the stomach; they have the effect, also, of keeping away serpents, and, employed as a liniment, are a cure for the stings of bees, wasps, and hornets. The root, pulled up before sunrise, and wrapped in wool of the colour known as "native,"[80] taken from a sheep which has just dropped a ewe lamb, is employed as a bandage for scrofulous swellings, even after they have suppurated. Some persons are of opinion, that for this purpose the root should be dug up with an implement of gold, and that care should be taken not to let it touch the ground.

Celsus,[81] too, recommends this root to be boiled in wine, and applied in cases of gout unattended with swelling.

CHAP. 15. (5.)—THE STAPHYLINOS, OR WILD PARSNIP: TWENTY-TWO REMEDIES.

The staphylinos, or, as some persons call it, "erratic[82] parsnip," is another kind. The seed[83] of this plant, pounded and taken in wine, reduces swelling of the abdomen, and alleviates hysterical suffocations and pains, to such a degree as to restore the uterus to its natural condition. Used as a liniment, also, with raisin wine, it is good for pains of the bowels in females; for men, too, beaten up with an equal proportion of bread, and taken in wine, it may be found beneficial for similar pains. It

[78] "Moloche agria." [79] See B. xix. c. 27.

[80] See B. viii. c. 73.

[81] De Remed. B. iv. c. 24. The parsnip is a stimulating plant, and it is not without reason, Fée says, that Celsus recommends it for this purpose.

[82] Or "wild." See B. xix. c. 27.

[83] This seed, Fée says, is an energetic excitant, and certainly would not be found suitable for any of the purposes here mentioned by Pliny; though equally recommended for them by Galen, Dioscorides, and in Athenæus.

is a diuretic also, and it will arrest the progress of phagedænic ulcers, if applied fresh with honey, or else dried and sprinkled on them with meal.

Dieuches recommends the root of it to be given, with hydromel, for affections of the liver and spleen, as also the sides, loins, and kidneys; and Cleophantus prescribes it for dysentery of long standing. Philistio says that it should be boiled in milk, and for strangury he prescribes four ounces of the root. Taken in water, he recommends it for dropsy, as well as in cases of opisthotony,[84] pleurisy, and epilepsy. Persons, it is said, who carry this plant about them, will never be stung by serpents, and those who have just eaten of it will receive no hurt from them. Mixed with axle-grease,[85] it is applied to parts of the body stung by reptiles; and the leaves of it are eaten as a remedy for indigestion.

Orpheus has stated that the staphylinos acts as a philtre,[86] most probably because, a very-well-established fact, when employed as a food, it is an aphrodisiac; a circumstance which has led some persons to state that it promotes conception. In other respects the cultivated parsnip has similar properties; though the wild kind is more powerful in its operation, and that which grows in stony soils more particularly. The seed, too, of the cultivated parsnip, taken in wine, or vinegar and water,[87] is salutary for stings inflicted by scorpions. By rubbing the teeth with the root of this plant, tooth-ache is removed.

CHAP. 16.—GINGIDION: ONE REMEDY.

The Syrians devote themselves particularly to the cultivation of the garden, a circumstance to which we owe the Greek proverb, "There is plenty of vegetables in Syria."[88]

[84] Tetanus, or contraction of the muscles, in which the head is twisted round or stretched backwards.

[85] "Axungia;" properly swine's grease, with which the axle-trees of chariots were rubbed. See B. xxviii. c. 9.

[86] Diphilus of Siphnos, as quoted in Athenæus, B. ix. c. 3, states that the ancients employed this plant as a philtre, for which reason it was called by some persons *φίλτρον*.

[87] "Posca." This was the ordinary drink of the lower classes at Rome, as also the soldiers when on service, and the slaves. "Oxycrate" is the scientific name sometimes given to vinegar and water.

[88] Πολλὰ Σύρων λάχανα. Similar to our proverb, probably, "There is more corn in Egypt."

Among other vegetables, that country produces one very similar to the staphylinos, and known to some persons as "gingidion,"[89] only that it is smaller than the staphylinos and more bitter, though it has just the same properties. Eaten either raw or boiled, it is very beneficial to the stomach, as it entirely absorbs all humours with which it may happen to be surcharged.

CHAP. 17.—THE SKIRRET: ELEVEN REMEDIES.

The wild[90] skirret, too, is very similar to the cultivated kind,[91] and is productive of similar effects. It sharpens[92] the stomach, and, taken with vinegar flavoured with silphium, or with pepper and hydromel, or else with garum, it promotes the appetite. According to Opion, it is a diuretic, and acts as an aphrodisiac.[93] Diocles is also of the same opinion; in addition to which, he says that it possesses cordial virtues for convalescents, and is extremely beneficial after frequent vomitings.

Heraclides has prescribed it against the effects of mercury,[94] and for occasional impotence, as also generally for patients when convalescent. Hicesius says that skirrets would appear to be prejudicial[95] to the stomach, because no one is able to eat three of them following; still, however, he looks upon them as beneficial to patients who are just resuming the use of wine. The juice of the cultivated skirret, taken in goats'-milk, arrests looseness of the stomach.

[89] The Daucus visnaga of Linnæus, the Daucus gingidium of Sprengel, the Visnagha, or Bisnagha of other botanists. It is also known as the "wild carrot," or "French carrot."

[90] Or "erratic." [91] See B. xix. c. 28.

[92] The root and seed, Fée observes, really are stimulants: there is no perceptible difference between the wild and cultivated plants. For silphium, see B. xix. c. 15.

[93] Fée thinks that it may be so in a slight degree.

[94] Pliny often speaks of persons having swallowed quicksilver, but never lets us know under what circumstances. As Fée remarks, it could not be accidentally; nor yet, on the other hand, could it have been done purposely, with the object of committing suicide, it not being an active poison. He concludes that it must have been taken medicinally, and that part of it becoming absorbed in the system, other remedies were resorted to, to counteract its noxious effects.

[95] "Inutile," and not "utile," is evidently the correct reading here.

CHAP. 18.—SILE, OR HARTWORT: TWELVE REMEDIES.

As the similitude which exists between their Greek names[96] has caused most persons to mistake the one for the other, we have thought it as well to give some account here of sile or hartwort,[97] though it is a plant which is very generally known. The best hartwort is that of Massilia,[98] the seed of it being broad and yellow; and the next best is that of Æthiopia, the seed of which is of a darker hue. The Cretan hartwort is the most odoriferous of the several kinds. The root of this plant has a pleasant smell; the seed of it is eaten by vultures, it is said.[99] Hartwort is useful to man for inveterate coughs, ruptures, and convulsions, being usually taken in white wine; it is employed also in cases of opisthotony, and for diseases of the liver, as well as for griping pains in the bowels and for strangury, in doses of two or three spoonfuls at a time.

The leaves of this plant are useful also, and have the effect of aiding parturition—in animals even: indeed, it is generally said that roes,[1] when about to bring forth, are in the habit of eating these leaves in particular. They are topically applied, also, in erysipelas; and either the leaves or the seed, taken fasting in the morning, are very beneficial to the digestion. Hartwort has the effect, too, of arresting looseness in cattle, either bruised and put into their drink, or else eaten by them after it has been chewed with salt. When oxen are in a diseased state, it is beaten up and poured into their food.

[96] Σισάρον, the "skirret," and Σέσελι, Σέλι, or Σίλι, "hart-wort."

[97] The Seseli tortuosum of Linnæus.

[98] Or Marseilles: the Seseli tortuosum. Fée says that there is great confusion relative to the supposed varieties of this plant. The Bupleurum fruticosum, or Seseli of Æthiopia, has leaves smaller than those of ivy, and resembling the leaves of honeysuckle. That of Peloponnesus, the Ligusticum austriacum, has a leaf similar to that of hemlock, but larger and thicker; and the Seseli of Crete, some species of the genus Tordylium, is a small plant which throws out shoots in large quantities. All these, he says, are so far different plants, that it is quite impossible to unite them with any degree of certainty under one concordance. Indeed, he thinks it very possible that they do not all belong to the genus Seseli of modern botanists.

[99] It is clear that Pliny hesitates to believe this story, and it is hardly necessary to remark how utterly foreign this is to the habits of carnivorous birds.

[1] See B. viii. c. 50. An absurd story.

CHAP. 19.—ELECAMPANE: ELEVEN REMEDIES.

Elecampane,[2] too, chewed fasting, has the effect of strengthening the teeth, if, from the moment that it is plucked, it is not allowed to touch the ground: a confection of it is a cure for cough. The juice of the root boiled is an expellent of intestinal tapeworm; and dried in the shade and reduced to powder, the root[3] is curative in cases of cough, convulsions, flatulency, and affections of the trachea. It is useful too, for the bites of venomous animals; and the leaves steeped in wine are applied topically for pains in the loins.

CHAP. 20.—ONIONS: TWENTY-SEVEN REMEDIES.

There are no such things in existence as wild onions. The cultivated onion is employed for the cure of dimness[4] of sight, the patient being made to smell at it till tears come into the eyes: it is still better even if the eyes are rubbed with the juice. It is said, too, that onions are soporific,[5] and that they are a cure for ulcerations of the mouth, if chewed with bread. Fresh onions in vinegar, applied topically, or dried onions with wine and honey, are good for the bites of dogs, care being taken not to remove the bandage till the end of a couple of days. Applied, too, in the same way, they are good for healing excoriations. Roasted in hot ashes, many persons have applied them topically, with barley meal, for defluxions of the eyes and ulcerations of the genitals. The juice, too, is employed as an ointment for sores of the eyes, albugo,[6] and argema.[7] Mixed with honey, it is used as a liniment for the stings[8] of serpents, and all kinds of ulcerous sores. In combination with woman's milk, it is employed for affections of the ears; and in cases of singing in the ears and hardness of hearing, it is injected into those organs with goose-grease or honey.

[2] The Inula Helenium of botanists. See B. xix. c. 29.

[3] Modern notions, Fée says, do not agree with those of the ancients on the subject of elecampane. The root owes the energy of its action to the camphor which it contains.

[4] This notion of the virtues of the onion is quite erroneous, though it still prevails to a considerable degree. Hippocrates, however, Dioscorides, and Galen, like Pliny, attribute this property to the onion.

[5] This, Fée says, is not the fact.

[6] A disease of the eye, by which the cornea contracts a whiteness.

[7] A white speck within the black of the eye.

[8] It is of no use whatever for such a purpose.

In cases where persons have been suddenly struck dumb, it has been administered to them to drink, mixed with water. In cases, too, of toothache, it is sometimes introduced into the mouth as a gargle for the teeth; it is an excellent remedy also for all kinds of wounds made by animals, scorpions more particularly.

In cases of alopecy[9] and itch-scab, bruised onions are rubbed on the parts affected: they are also given boiled to persons afflicted with dysentery or lumbago. Onion peelings, burnt to ashes and mixed with vinegar, are employed topically for stings of serpents and multipedes.[10]

In other respects, there are remarkable differences of opinion among medical men. The more modern writers have stated that onions are good for the thoracic organs and the digestion, but that they are productive of flatulency and thirst. The school of Asclepiades maintains that, used as an aliment, onions impart a florid[11] colour to the complexion, and that, taken fasting every day, they are promoters of robustness and health; that as a diet, too, they are good for the stomach by acting upon the spirits, and have the effect of relaxing the bowels. He says, too, that, employed as a suppository, onions disperse piles, and that the juice of them, taken in combination with juice of fennel, is wonderfully beneficial in cases of incipient dropsy. It is said, too, that the juice, taken with rue and honey, is good for quinsy, and has the effect of dispelling lethargy.[12] Varro assures us that onions, pounded with salt and vinegar and then dried, will never be attacked by worms.[13]

CHAP. 21. (6.)—CUTLEEK: THIRTY-TWO REMEDIES.

Cutleek[14] has the effect of stanching bleeding at the nose,

[9] Fox evil, or scurf, or scaldhead: a disease which causes the hair to fall off the body. It derives its name from the Greek ἀλώπηξ, a "fox," from the circumstance that they were supposed to be peculiarly affected with a similar disease.

[10] Or millepedes. See c. 6 of this Book.

[11] So the school of Salerno says—

Non modicum sanas Asclepius asserit illas,
Præsertim stomacho, pulchrumque creare colorem.

[12] This is not the case.

[13] "Vermiculis." Small worms or maggots.

[14] "Porrum sectivum." See B. xix. c. 33.

the nostrils being plugged with the plant, pounded, or else mixed with nut-galls or mint. The juice of it, taken with woman's milk, arrests floodings after a miscarriage; and it is remedial in cases even of inveterate cough, and of affections of the chest[15] and lungs. The leaves, applied topically, are employed for the cure of pimples, burns, and epinyctis[16]—this last being the name given to an ulcer, known also as "syce,"[17] situate in the corner of the eye, from which there is a continual running: some persons, however, give this name to livid pustules, which cause great restlessness in the night. Other kinds of ulcers, too, are treated with leeks beaten up with honey: used with vinegar, they are extensively employed also for the bites of wild beasts, as well as of serpents and other venomous creatures. Mixed with goats' gall, or else honied wine in equal proportions, they are used for affections of the ears, and, combined with woman's milk, for singing in the ears. In cases of head-ache, the juice is injected into the nostrils, or else into the ear at bed-time, two spoonfuls of juice to one of honey.

This juice is taken too with pure wine,[18] for the stings of serpents and scorpions, and, mixed with a semi-sextarius of wine, for lumbago. The juice, or the leek itself, eaten as a food, is very beneficial to persons troubled with spitting of blood, phthisis, or inveterate catarrhs; in cases also of jaundice or dropsy, and for nephretic pains, it is taken in barley-water, in doses of one acetabulum of juice. The same dose, too, mixed with honey, effectually purges the uterus. Leeks are eaten, too, in cases of poisoning by fungi,[19] and are applied topically to wounds: they act also as an aphrodisiac,[20] allay thirst, and dispel the effects of drunkenness; but they have the effect of weakening the sight and causing flatulency, it is said, though, at the same time, they are not injurious to

[15] Fée thinks that boiled leeks may possibly, with some justice, be ranked among the pectorals.

[16] This, as Pliny himself here remarks, is a different disease from that previously mentioned in c. 6 of this Book.

[17] From the Greek συκη, "a fig."

[18] "Merum."

[19] They would be of no utility whatever.

[20] This is an unfounded statement, Fée says.

the stomach, and act as an aperient. Leeks impart a remarkable clearness to the voice.[21]

CHAP. 22.—BULBED LEEK: THIRTY-NINE REMEDIES.

Bulbed leek[22] produces the same effects as cut-leek,[23] but in a more powerful degree. To persons troubled with spitting of blood, the juice of it is given, with powdered nut-galls[24] or frankincense, or else gum acacia.[25] Hippocrates,[26] however, prescribes it without being mixed with anything else, and expressed himself of opinion that it has the property of opening the uterus when contracted, and that taken as an aliment by females, it is a great promoter of fecundity. Beaten up and mixed with honey, it cleanses ulcerous sores. It is good for the cure of coughs, catarrhs, and all affections of the lungs and of the trachea, whether given in the form of a ptisan, or eaten raw, the head excepted: it must be taken, however, without bread, and upon alternate days, and this even if there should be purulent expectorations.

Taken in this form, it greatly improves the voice, and acts as an aphrodisiac, and as a promoter of sleep. The heads, boiled in a couple of waters, arrest looseness of the bowels, and fluxes of long standing; and a decoction of the outer coat acts as a dye upon grey hair.[27]

CHAP. 23.—GARLIC: SIXTY-ONE REMEDIES.

Garlic[28] has very powerful[29] properties, and is of great utility to persons on changes of water or locality. The very smell of it drives away serpents and scorpions, and, according to what some persons say, it is a cure for wounds made by

[21] See B. xix. c. 33. Aristotle, Sotion, and Dioscorides state to the same effect.

[22] "Porrum capitatum."

[23] There is no difference now recognized between these two kinds of leeks, so far as their medicinal effects are concerned.

[24] See B. xvi. c. 9.

[25] *I. e.* gum arabic. For an account of the Acacia Nilotica, see B. xiii. c. 19.

[26] De Morb. Mul. B ii. c. 89, and De Steril. c. 13.

[27] This is not the fact.

[28] See B. xix. c. 34.

[29] Fée says that the action of garlic is so powerful, that it is one of the most energetic vermifuges known; but at the same time it is so strong an excitant, that it is very liable to cause worse evils than the presence even of worms.

every kind of wild beast, whether taken with the drink or food, or applied topically. Taken in wine, it is a remedy for the sting of the hæmorrhoïs[30] more particularly, acting as an emetic. We shall not be surprised too, that it acts as a powerful remedy for the bite of the shrew-mouse, when we find that it has the property of neutralizing aconite, otherwise known as "pardalianches."[31] It neutralizes henbane, also, and cures the bites of dogs, when applied with honey to the wound. It is taken in drink also for the stings of serpents; and of its leaves, mixed with oil, a most valuable liniment is made for bruises on the body, even when they have swelled and formed blisters.

Hippocrates[32] is of opinion also, that fumigations made with garlic have the effect of bringing away the after-birth; and he used to employ the ashes of garlic, mixed with oil, for the cure of running ulcers of the head. Some persons have prescribed boiled garlic for asthmatic patients; while others, again, have given it raw. Diocles prescribes it, in combination with centaury, for dropsy, and to be taken in a split fig, to promote the alvine evacuations: taken fresh, however, in unmixed wine, with coriander, it is still more efficacious for that purpose. Some persons have given it, beaten up in milk, for asthma. Praxagoras used to prescribe garlic, mixed with wine, for jaundice, and with oil and pottage for the iliac passion: he employed it also in a similar form, as a liniment for scrofulous swellings of the neck.

The ancients used to give raw garlic in cases of madness, and Diocles administered it boiled for phrenitis. Beaten up, and taken in vinegar and water, it is very useful as a gargle for quinsy. Three heads of garlic, beaten up in vinegar, give relief in toothache: and a similar result is obtained by rinsing the mouth with a decoction of garlic, and inserting pieces of it in the hollow teeth. Juice of garlic is sometimes injected into the ears with goose-grease,[32*] and, taken in drink, or simi-

[30] This serpent is described by Lucan, in the "Pharsalia," B. ix. l. 708, *et seq.*, where a fearful account is given of the effects of its sting. Nicander, in his "Theriaca," informs us that those bitten by the hæmorrhoïs die with the blood flowing from the nose and ears, whence its name.

[31] Pard or panther-strangle. See B. xxvii. c. 2. The juice of garlic has no such effect as here stated.

[32] De Morb. Mul. B. i. c. 74.

[32*] See B. xxix. c. 39.

larly injected, in combination with vinegar and nitre, it arrests phthiriasis[33] and porrigo.[34] Boiled with milk, or else beaten up and mixed with soft cheese, it is a cure for catarrhs. Employed in a similar manner, and taken with pease or beans, it is good for hoarseness, but in general it is found to be more serviceable cooked than raw, and boiled than roasted: in this last state, however, it is more beneficial to the voice. Boiled in oxymel, it has the effect of expelling tape-worm and other intestinal worms; and a pottage made of it is a cure for tenesmus. A decoction of garlic is applied topically for pains in the temples; and first boiled and then beaten up with honey, it is good for blisters. A decoction of it, with stale grease, or milk, is excellent for a cough; and where persons are troubled with spitting of blood or purulent matter, it may be roasted in hot ashes, and taken with honey in equal proportions. For convulsions and ruptures it is administered in combination with salt and oil; and, mixed with grease, it is employed for the cure of suspected tumours.

Mixed with sulphur and resin, garlic draws out the humours from fistulous sores, and employed with pitch, it will extract an arrow even[35] from the wound. In cases of leprosy, lichen, and eruptions of the skin, it acts as a detergent, and effects a cure, in combination with wild marjoram, or else reduced to ashes, and applied as a liniment with oil and garum.[36] It is employed in a similar manner, too, for erysipelas; and, reduced to ashes, and mixed with honey, it restores contused or livid spots on the skin to their proper colour. It is generally believed, too, that taken in the food and drink, garlic is a cure for epilepsy, and that a clove of it, taken in astringent wine, with an obolus' weight of silphium,[37] will have the effect of dispelling quartan fever. Garlic cures coughs also, and sup-

[33] The Morbus pedicularis. From the frequent mention of it, Fée says, it would seem to have been very prevalent in ancient times; whereas now, it is but rarely known.

[34] A disease of the skin; supposed by some to be the same as ringworm. The word is employed in modern medicine to signify skin diseases in general, such as itch, lichen, scaldhead, ringworm, &c.

[35] Pintianus suggests "hirudines," "leeches," and not "arundines," arrows. The latter reading is supported, however, by Plinius Valerianus and M. Empiricus.

[36] An expensive kind of fish-sauce: for some further account of it see B. ix. c. 30.

[37] See B. xix. c. 15.

purations of the chest, however violent they may be; to obtain which result, another method is followed, it being boiled with broken beans, and employed as a diet till the cure is fully effected. It is a soporific also, and in general imparts to the body an additional ruddiness of colour.

Garlic acts as an aphrodisiac, beaten up with fresh coriander, and taken in pure wine. The inconveniences which result from the use of it, are dimness of the sight and flatulency; and if taken in too large quantities, it does injury to the stomach, and creates thirst. In addition to these particulars, mixed with spelt flour, and given to poultry in their food, it preserves them from attacks of the pip.[38] Beasts of burden, it is said, will void their urine all the more easily, and without any pain, if the genitals are rubbed with garlic.

CHAP. 24.—THE LETTUCE: FORTY-TWO REMEDIES. THE GOAT-LETTUCE: FOUR REMEDIES.

The first kind of lettuce which grows spontaneously, is the one that is generally known as "goat[39]-lettuce;" thrown into the sea, this vegetable has the property of instantaneously killing all the fish that come into its vicinity. The milky juice of this lettuce,[40] left to thicken and then put into vinegar, is given in doses of two oboli, with the addition of one cyathus of water, to patients for dropsy. The stalk and leaves, bruised and sprinkled with salt, are used for the cure of wounds of the sinews. Pounded with vinegar, and employed as a gargle in the morning twice a month, they act as a preventive of tooth-ache.

CHAP. 25.—CÆSAPON: ONE REMEDY. ISATIS: ONE REMEDY. THE WILD LETTUCE: SEVEN REMEDIES.

There is a second kind of wild lettuce, known by the Greeks

[38] See B. x. c. 78. [39] "Caprina." See B. xxvi. c. 39.

[40] Fée is of opinion that this in reality is not a lettuce, but that Pliny has been led, by the milky juice which it contains, to that conclusion. In B. xxvi. c. 39, he calls it "tithymalum." Hardouin conjectures it to have been the spurge, or Euphorbia lathyris of Linnæus, the juice of which is a violent drastic; and Fée is of opinion that it must have been one of the Euphorbiaceæ. At the same time, he says, powerful as their properties are, we cannot believe that they exercise the destructive effects on fish here stated.

as "cæsapon."[41] The leaves of this lettuce, applied as a liniment with polenta,[42] are used for the cure of ulcerous sores. This plant is found growing in the fields. A third kind, again, grows in the woods; the name given to it is "isatis."[43] The leaves of this last, beaten up and applied with polenta, are very useful for the cure of wounds. A fourth kind is used by dyers of wool; in the leaves it would resemble wild lapathum, were it not that they are more numerous and darker. This lettuce has the property of stanching blood, and of healing phagedænic sores and putrid spreading ulcers, as well as tumours before suppuration. Both the root as well as the leaves are good, too, for erysipelas; and a decoction of it is drunk for affections of the spleen. Such are the properties peculiar to each of these varieties.

CHAP. 26.—HAWK-WEED: SEVENTEEN REMEDIES.

The properties which are common to all the wild varieties[44] are whiteness, a stem sometimes as much as a cubit in length, and a roughness upon the stalk and leaves. Among these plants there is one with round, short leaves, known to some persons as "hieracion;"[45] from the circumstance that the hawk tears it open and sprinkles[46] its eyes with the juice, and so dispels any dimness of sight of which it is apprehensive. The juice of all these plants is white, and in its properties resembles that of the poppy.[47] It is collected at harvest-time, by

[41] Fée thinks that this plant may be looked for among the varieties of the Sonchus or the Hieracium, which belong to the same family as the lettuce.

[42] See B. xviii. c. 14.

[43] Fée thinks that this is the Isatis tinctoria of Linnæus in a wild state, and Littré suggests that the one next mentioned is the same plant, cultivated. Fée says, however, that this plant, employed in dyeing wool, does not contain any milky juice, a fact which should have cautioned Pliny against classing it among the Lactucæ.

[44] Of the lettuce, evidently. Fée says, who would recognise a lettuce, with its green leaves, and smooth stalk and leaves, under this description? Still, it is by no means an inaccurate description of the wild lettuce.

[45] "Hawk-weed," from the Greek ἱέραξ, "a hawk." Under this name are included, Fée thinks, the varieties of the genus Crepis.

[46] Apuleius, Metam. c. 30, says this of the eagle, when preparing to soar aloft.

[47] This is in some degree true of the juices of the wild lettuces, in a medicinal point of view; but it must be remembered that he has enumerated the Isatis among them, which in reality has no milky juice at all.

making incisions in the stalk, and is kept in new earthen vessels, being renowned as a remedy for numerous maladies.[48] Mixed with woman's milk, it is a cure for all diseases of the eyes, such as argema for instance, films on the eyes, scars and inflammations[49] of all kinds, and dimness of the sight more particularly. It is applied to the eyes, too, in wool, as a remedy for defluxions of those organs.

This juice also purges the bowels, taken in doses of two oboli in vinegar and water. Drunk in wine it is a cure for the stings of serpents, and the leaves and stalk of the plant are pounded and taken in vinegar. They are employed also as a liniment for wounds, the sting of the scorpion more particularly; combined, too, with oil and vinegar, they are similarly applied for the bite of the phalangium.[50] They have the effect, also, of neutralizing other poisons, with the exception of those which kill by suffocation or by attacking the bladder, as also with the exception of white lead. Steeped in oxymel, they are applied to the abdomen for the purpose of drawing out vicious humours of the intestines. The juice is found good, also, in cases of retention of the urine. Crateuas prescribes it to be given to dropsical patients, in doses of two oboli, with vinegar and one cyathus of wine.

Some persons collect the juice of the cultivated lettuce as well, but it is not so efficacious[51] as the other. We have already made mention,[52] to some extent, of the peculiar properties of the cultivated lettuce, such as promoting sleep, allaying the sexual passions, cooling the body when heated, purging[53] the stomach, and making blood. In addition to these, it possesses no few properties besides; for it has the effect of removing flatulency, and of dispelling eructations, while at the same time it promotes the digestion, without ever being indigestible itself. Indeed, there is no article of diet known that is a greater stimulant to the appetite, or which tends in a greater degree to

[48] "Lactucarium," or the inspissated milky juice of the garden lettuce, is still used occasionally as a substitute for opium, having slightly anodyne properties, but, as Fée remarks, all that Pliny says here of its effects is erroneous.

[49] "Adustiones;" "burns," perhaps.

[50] A kind of spider. See B. xi. cc. 24, 28, 29.

[51] This is consistent with modern experience, as to the medicinal effects of the cultivated plants in general.

[52] In B. xix. c. 38.

[53] The lettuce is not a purgative, nor has it the property here ascribed to it, of making blood.

modify it; it being the extent, either way, to which it is eaten that promotes these opposite results. In the same way, too, lettuces eaten in too large quantities are laxative, but taken in moderation they are binding. They have the effect, also, of attenuating the tough, viscous, phlegm, and, according to what some persons say, of sharpening the senses. They are extremely serviceable, too, to debilitated stomachs; for which purpose * *[54] oboli of sour sauce[55] is added to them, the sharpness of which is modified by the application of sweet wine, to make it of the same strength as vinegar-sauce.[56] If, again, the phlegm with which the patient is troubled is extremely tough and viscous, wine of squills or of wormwood is employed; and if there is any cough perceptible, hyssop wine is mixed as well.

Lettuces are given with wild endive for cœliac affections, and for obstructions of the thoracic organs. White lettuces, too, are prescribed in large quantities for melancholy and affections of the bladder. Praxagoras recommends them for dysentery. Lettuces are good, also, for recent burns, before blisters have made their appearance: in such cases they are applied with salt. They arrest spreading ulcers, being applied at first with saltpetre, and afterwards with wine. Beaten up, they are applied topically for erysipelas; and the stalks, beaten up with polenta, and applied with cold water, are soothing for luxations of the limbs and spasmodic contractions; used, too, with wine and polenta, they are good for pimples and eruptions. For cholera lettuces have been given, cooked in the saucepan, in which case it is those with the largest stalk and bitter that are the best: some persons administer them, also, as an injection, in milk. These stalks boiled, are remarkably good, it is said, for the stomach: the summer lettuce, too, more particularly, and the bitter, milky lettuce, of which we have already[57] made mention as the "meconis," have a soporific effect. This juice, in combination with woman's milk, is said to be extremely beneficial to the eyesight, if applied to the head in good time; it is a remedy,

[54] Sillig is probably correct in his belief that there is a lacuna here.

[55] "Oxypori." [56] "Ad intinctum aceti."

[57] In B. xix. c. 38; the "opium" or "poppy lettuce," the Lactuca silvestris of modern botany, the soporific properties of which are superior to those of the cultivated kinds.

too, for such maladies of the eyes as result from the action of cold.

I find other marvellous praises lavished upon the lettuce, such, for instance, as that, mixed with Attic honey, it is no less beneficial for affections of the chest than abrotonum ;[58] that the menstrual discharge is promoted in females by using it as a diet; that the seed, too, of the cultivated lettuce is administered as a remedy for the stings of scorpions, and that pounded, and taken in wine, it arrests all libidinous dreams and imaginations during sleep; that water, too, which affects[59] the brain will have no injurious effects upon those who eat lettuce. Some persons have stated, however, that if lettuces are eaten too frequently they will prove injurious to the eyesight.

CHAP. 27. (8.)—BEET: TWENTY-FOUR REMEDIES.

Nor are the two varieties of the beet without their remedial properties.[60] The root of either white or black beet, if hung by a string, fresh-gathered, and softened with water, is said to be efficacious for the stings of serpents. White beet, boiled and eaten with raw garlic, is taken for tapeworm ; the root, too, of the black kind, similarly boiled in water, removes porrigo ; indeed, it is generally stated, that the black beet is the more efficacious[61] of the two. The juice of black beet is good for inveterate head-aches and vertigo, and injected into the ears, it stops singing in those organs. It is a diuretic, also, and employed in injections is a cure for dysentery and jaundice.

This juice, used as a liniment, allays tooth-ache, and is good for the stings of serpents ; but due care must be taken that it is extracted from this root only. A decoction, too, of beet-root is a remedy for chilblains.

A liniment of white beet-root applied to the forehead, arrests defluxions of the eyes, and mixed with a little alum it is an excellent remedy for erysipelas. Beaten up, and applied

[58] Or southern-wood. See B. xxi. c. 34.

[59] See B. xxxi. cc. 11 and 12.

[60] There are few plants, Fée says, which are so utterly destitute of all remedial properties as the beet. See B. xix. c. 40.

[61] Fée says that the leaves of beet are not at all efficacious except as applications for inflammations of the body.

without oil, it is a cure for excoriations. In the same way, too, it is good for pimples and eruptions. Boiled, it is applied topically to spreading ulcers, and in a raw state it is employed in cases of alopecy, and running ulcers of the head. The juice, injected with honey into the nostrils, has the effect of clearing the head. Beet-root is boiled with lentils and vinegar, for the purpose of relaxing the bowels; if it is boiled, however, some time longer, it will have the effect of arresting fluxes of the stomach and bowels.

CHAP. 28.—LIMONION, OR NEUROIDES: THREE REMEDIES.

There is a wild beet, too, known by some persons as "limonion,"[62] and by others as "neuroides;" it has leaves much smaller and thinner than the cultivated kind, and lying closer together. These leaves amount often to eleven[63] in number, the stalk resembling that of the lily.[64] The leaves of this plant are very useful for burns, and have an astringent taste in the mouth: the seed, taken in doses of one acetabulum, is good for dysentery. It is said that a decoction of beet with the root has the property of taking stains out of cloths and parchment.

CHAP. 29.—ENDIVE: THREE REMEDIES.

Endive,[65] too, is not without its medicinal uses. The juice of it, employed with rose oil and vinegar, has the effect of allaying headache; and taken with wine, it is good for pains in the liver and bladder: it is used, also, topically, for defluxions of the eyes. The spreading endive has received from some per-

[62] Dioscorides merely says that the leaves of the limonion are similar to those of beet, but he does not state that it *is* a kind of wild beet.

[63] Dioscorides says "ten or more."

[64] Fée is inclined to identify the "limonium," or "meadow-plant," with the Statice limonium of Linnæus; but looks upon its identification as very doubtful. Fuchs, Tragus, and Lonicerus, have identified it with the Pyrola rotundifolia; but that is not a meadow plant, it growing only in the woods. Others, again, have suggested the Senecio doria, or "water trefoil."

[65] Divided by naturalists into wild chicory or endive, the Cichorium intybus of Linnæus, and cultivated endive, the Cichorium endivia of Linnæus. The name "endive" comes from the Arabian "hindeb;" but whether that was derived from the Latin "intubum," or vice versâ, is uncertain. The two kinds above mentioned, are subdivided, Fée says, into two varieties, the cultivated and the wild. See B. xix. c. 39.

sons among us the name of "ambula." In Egypt, the wild endive is known as "cichorium,"[66] the cultivated kind being called "seris." This last is smaller than the other, and the leaves of it more full of veins.

CHAP. 30. — CICHORIUM OR CHRESTON, OTHERWISE CALLED PANCRATION, OR AMBULA: TWELVE REMEDIES.

Wild endive or cichorium has certain refreshing qualities,[67] used as an aliment. Applied by way of liniment, it disperses abscesses, and a decoction of it loosens the bowels. It is also very beneficial to the liver, kidneys, and stomach. A decoction of it in vinegar has the effect of dispelling the pains of strangury; and, taken in honied wine, it is a cure for the jaundice, if unattended with fever. It is beneficial, also, to the bladder, and a decoction of it in water promotes the menstrual discharge to such an extent as to bring away the dead fœtus even.

In addition to these qualities, the magicians[68] state that persons who rub themselves with the juice of the entire plant, mixed with oil, are sure to find more favour with others, and to obtain with greater facility anything they may desire. This plant, in consequence of its numerous salutary virtues, has been called by some persons "chreston,"[69] and "pancration"[70] by others.

CHAP. 31.—HEDYPNOÏS: FOUR REMEDIES.

There is a sort of wild endive, too, with a broader leaf, known to some persons as "hedypnoïs."[71] Boiled, it acts as an astringent upon a relaxed stomach, and eaten raw, it is productive of constipation. It is good, too, for dysentery, when eaten with lentils more particularly. This variety, as well as

[66] The foundation of the Greek name, κιχώριον, and the Arabic "Schikhrieh."

[67] The medicinal properties of endive vary, according as it is employed wild or cultivated, and according to the part employed. The leaves are more bitter than the stalk, but not so much so as the root. The juice of all the varieties is very similar, probably, to that of the lettuce; but, as Fée says, little use has been made of it in modern times.

[68] Or else, "Magi."

[69] The "useful."

[70] "The all-powerful."

[71] The Cichorium luteum of C. Bauhin, the Leontodon palustre of Linnæus: known to us as the "dandelion," or by a coarser name.

the preceding one, is useful for ruptures and spasmodic contractions, and relieves persons who are suffering from spermatorrhœa.

CHAP. 32.—SERIS, THREE VARIETIES OF IT: SEVEN REMEDIES BORROWED FROM IT.

The vegetable, too, called "seris,"[72] which bears a considerable resemblance to the lettuce, consists of two kinds. The wild, which is of a swarthy colour, and grows in summer, is the best of the two; the winter kind, which is whiter than the other, being inferior. They are both of them bitter, but are extremely beneficial to the stomach, when distressed by humours more particularly. Used as food with vinegar, they are cooling, and, employed as a liniment, they dispel other humours besides those of the stomach. The roots of the wild variety are eaten with polenta for the stomach; and in cardiac diseases they are applied topically above the left breast. Boiled in vinegar, all these vegetables are good for the gout, and for patients troubled with spitting of blood or spermatorrhœa; the decoction being taken on alternate days.

Petronius Diodotus, who has written a medical Anthology,[73] utterly condemns seris, and employs a multitude of arguments to support his views: this opinion of his is opposed, however, to that of all other writers on the subject.

CHAP. 33. (9).—THE CABBAGE: EIGHTY-SEVEN REMEDIES. RECIPES MENTIONED BY CATO.

It would be too lengthy a task to enumerate all the praises of the cabbage, more particularly as the physician Chrysippus has devoted a whole volume to the subject, in which its virtues are described in reference to each individual part of the human body. Dieuches has done the same, and Pythagoras too, in particular. Cato, too, has not been more sparing in its praises than the others; and it will be only right to examine the opinions which he expresses in relation to it, if for no other purpose than to learn what medicines the Roman people made use of for six hundred years.

The most ancient Greek writers have distinguished three[74] varieties of the cabbage; the curly[75] cabbage, to which they

[72] The kind known as garden endive, the Cichorium endivia of Linnæus.
[73] "Anthologumena." [74] See B. xix. c. 41. [75] "Crispam."

have given the name of "selinoïdes,"[76] from the resemblance of its leaf to that of parsley, beneficial to the stomach, and moderately relaxing to the bowels; the "helia," with broad leaves running out from the stalk—a circumstance, owing to which some persons have given it the name of "caulodes"—of no use whatever in a medicinal point of view; and a third, the name of which is properly "crambe," with thinner leaves, of simple form, and closely packed, more bitter than the others, but extremely efficacious in medicine.[77]

Cato[78] esteems the curly cabbage the most highly of all, and next to it, the smooth cabbage with large leaves and a thick stalk. He says that it is a good thing for headache, dimness of the sight, and dazzling[79] of the eyes, the spleen, stomach, and thoracic organs, taken raw in the morning, in doses of two acetabula, with oxymel, coriander, rue, mint, and root of silphium.[80] He says, too, that the virtue of it is so great that the very person even who beats up this mixture feels himself all the stronger for it; for which reason he recommends it to be taken mixed with these condiments, or, at all events, dressed with a sauce compounded of them. For the gout, too, and diseases of the joints, a liniment of it should be used, he says, with a little rue and coriander, a sprinkling of salt, and some barley meal: the very water even in which it has been boiled is wonderfully efficacious, according to him, for the sinews and joints. For wounds, either recent or of long standing, as also for carcinoma,[81] which is incurable by any other mode of treatment, he recommends fomentations to be made with warm water, and, after that, an application of cabbage, beaten up, to the parts affected, twice a-day. He says, also, that fistulas and sprains should be treated in a similar way, as well as all humours which it may be desirable to bring to a head and disperse; and he states that this vegetable, boiled and eaten fasting, in considerable quantities, with oil

[76] "Parsley-like."

[77] The only use now made of the cabbage, in a medicinal point of view, is the extraction from the red cabbage, which is rich in saccharine matter, of a pectoral, and the employment of the round cabbage, in the form of sour-krout, as an antiscorbutic. The great majority of the statements as to the virtues of the cabbage, though supported by Cato, and in a great measure by Hippocrates, are utterly fallacious.

[78] De Re Rust. 157.

[79] "Scintillationibus."

[80] See B. xix. c. 15.

[81] Or cancer.

and salt, has the effect of preventing dreams and wakefulness; also, that if, after one boiling, it is boiled a second time, with the addition of oil, salt, cummin, and polenta, it will relieve gripings[82] in the stomach; and that, if eaten in this way without bread, it is more beneficial still. Among various other particulars, he says, that if taken in drink with black wine, it has the effect of carrying off the bilious secretions; and he recommends the urine of a person who has been living on a cabbage diet to be preserved, as, when warmed, it is a good remedy for diseases of the sinews. I will, however, here give the identical words in which Cato expresses himself upon this point: "If you wash little children with this urine," says he, "they will never be weak and puny."

He recommends, also, the warm juice of cabbage to be injected into the ears, in combination with wine, and assures us that it is a capital remedy for deafness: and he says that the cabbage is a cure for impetigo[83] without the formation of ulcers.

CHAP. 34.—OPINIONS OF THE GREEKS RELATIVE THERETO.

As we have already given those of Cato, it will be as well to set forth the opinions entertained by the Greek writers on this subject, only in relation, however, to those points upon which he has omitted to touch. They are of opinion that cabbage, not thoroughly boiled, carries off the bile, and has the effect of loosening the bowels; while, on the other hand, if it is boiled twice over, it will act as an astringent. They say, too, that as there is a natural[84] enmity between it and the vine, it combats the effects of wine; that, if eaten before drinking, it is sure to prevent[85] drunkenness, being equally a dispellent of crapulence[86] if taken after drinking: that cabbage is a food very beneficial to the eyesight, and that the juice of it raw is even more so, if the corners of the eyes are only touched with a mixture of it with Attic honey. Cabbage, too,

[82] Cato, De Re Rust., 156, 157. [83] See Note 11 to C. 2 of this Book.

[84] This absurd notion of antipathy is carried so far by the author of the Geoponica, B. v. c. 11, that he states that if wine is thrown on cabbage while on the fire, it will never be thoroughly boiled.

[85] Fée remarks, that this fact would surely have engaged the attention of the moderns, if there had been any truth in the statement.

[86] "Crapulam discuti." "Crapula" was that state, after drinking, colloquially known at the present day as "seediness."

according to the same testimony, is extremely easy of digestion,[87] and, as an aliment, greatly tends to clear the senses.

The school of Erasistratus proclaims that there is nothing more beneficial to the stomach and the sinews than cabbage; for which reason, he says, it ought to be given to the paralytic and nervous, as well as to persons affected with spitting of blood. Hippocrates prescribes it, twice boiled, and eaten with salt, for dysentery and cœliac affections, as also for tenesmus and diseases of the kidneys; he is of opinion, too, that, as an aliment, it increases the quantity of the milk in women who are nursing, and that it promotes the menstrual discharge.[88] The stalk, too, eaten raw, is efficacious in expelling the dead fœtus. Apollodorus prescribes the seed or else the juice of the cabbage to be taken in cases of poisoning by fungi; and Philistion recommends the juice for persons affected with opisthotony, in goats'-milk, with salt and honey.

I find, too, that persons have been cured of the gout by eating cabbage and drinking a decoction of that plant. This decoction has been given, also, to persons afflicted with the cardiac disease and epilepsy, with the addition of salt; and it has been administered in white wine, for affections of the spleen, for a period of forty days.

According to Philistion, the juice of the raw root should be given as a gargle to persons afflicted with icterus[89] or phrenitis, and for hiccup he prescribes a mixture of it, in vinegar, with coriander, anise, honey, and pepper. Used as a liniment, cabbage, he says, is beneficial for inflations of the stomach; and the very water, even, in which it has been boiled, mixed with barley-meal, is a remedy for the stings of serpents[90] and foul ulcers of long standing; a result which is equally effected by a mixture of cabbage-juice with vinegar or fenugreek. It is in this manner, too, that some persons employ it topically, for affections of the joints and for gout. Applied topically, cabbage is a cure for epinyctis, and all kinds of spreading eruptions on the body, as also for sudden[91] attacks of dimness; indeed, if

[87] The contrary is in reality the case, it being a diet only suitable to strong stomachs.

[88] De Morb. Mulier. B. i. cc. 73 and 74. De Nat. Mulier. 29 and 31.

[89] The jaundice.

[90] Fée is inclined to account for the numerous antidotes and remedies mentioned for the stings of serpents, by supposing that the stings themselves of many of them were not really venomous, but only *supposed* to be so.

[91] "Repentinas caligines."

eaten with vinegar, it has the effect of curing the last. Applied by itself, it heals contusions and other livid spots; and mixed with a ball of alum in vinegar, it is good as a liniment for leprosy and itch-scabs: used in this way, too, it prevents the hair from falling off.

Epicharmus assures us that, applied topically, cabbage is extremely beneficial for diseases of the testes and genitals, and even better still when employed with bruised beans; he says, too, that it is a cure for convulsions; that, in combination with rue, it is good for the burning heats of fever and maladies of the stomach; and that, with rue-seed, it brings away the after-birth. It is of use, also, for the bite of the shrew-mouse. Dried cabbage-leaves, reduced to a powder, are a cathartic both by vomit and by stool.

CHAP. 35.—CABBAGE-SPROUTS.

In all varieties of the cabbage, the part most agreeable to the taste is the cyma,[92] although no use is made of it in medicine, as it is difficult to digest, and by no means beneficial to the kidneys. At the same time, too, it should not be omitted, that the water in which it has been boiled,[93] and which is so highly praised for many purposes, gives out a very bad smell when poured upon the ground. The ashes of dried cabbage-stalks are generally reckoned among the caustic substances: mixed with stale grease, they are employed for sciatica, and, used as a liniment, in the form of a depilatory, together with silphium[94] and vinegar, they prevent hair that has been once removed from growing again. These ashes, too, are taken lukewarm in oil, or else by themselves, for convulsions, internal ruptures, and the effects of falls with violence.

And are we to say then that the cabbage is possessed of no evil qualities whatever? Certainly not, for the same authors tell us, that it is apt to make the breath smell, and that it is injurious to the teeth and gums. In Egypt, too, it is never eaten, on account of its extreme bitterness.[95]

[92] "Sprout," or "Brussels sprout." See B. xix. c. 41.

[93] He is probably speaking of cabbage-water in general.

[94] See B. xix. c. 15.

[95] This bitter or pungent cabbage, Fée suggests, did not, probably, belong to the genus Brassica.

CHAP. 36.—THE WILD CABBAGE: THIRTY-SEVEN REMEDIES.

Cato[96] extols infinitely more highly the properties of wild or erratic cabbage;[97] so much so, indeed, as to affirm that the very powder of it, dried and collected in a scent-box, has the property, on merely smelling at it, of removing maladies of the nostrils and the bad smells resulting therefrom. Some persons call this wild cabbage "petræa:"[98] it has an extreme antipathy to wine, so much so, indeed, that the vine invariably[98*] avoids it, and if it cannot make its escape, will be sure to die. This vegetable has leaves of uniform shape, small, rounded, and smooth: bearing a strong resemblance to the cultivated cabbage, it is whiter, and has a more downy[99] leaf.

According to Chrysippus, this plant is a remedy for flatulency, melancholy, and recent wounds, if applied with honey, and not taken off before the end of six days: beaten up in water, it is good also for scrofula and fistula. Other writers, again, say that it is an effectual cure for spreading sores on the body, known as "nomæ;" that it has the property, also, of removing excrescences, and of reducing the scars of wounds and sores; that if chewed raw with honey, it is a cure for ulcers of the mouth and tonsils; and that a decoction of it used as a gargle with honey, is productive of the same effect. They say, too, that, mixed in strong vinegar with alum, in the proportion of three parts to two of alum, and then applied as a liniment, it is a cure for itch-scabs and leprous sores of long standing. Epicharmus informs us, that for the bite of a mad dog, it is quite sufficient to apply it topically to the part affected, but that if used with silphium and strong vinegar, it is better still: he says, too, that it will kill a dog, if given to it with flesh to eat.

The seed of this plant, parched, is remedial in cases of poison-

[96] De Re Rust. c. 157.

[97] Fée is of opinion that Pliny has here confused the description of two different plants; and that, intending to describe the Brassica arvensis of modern botany, he has superadded a description of the "Crambe agria," mentioned by Dioscorides, which appears to be identical with the Crambe maritima, or Brassica marina, the "sea-cabbage" of the ancients (see c. 38.), the Convolvulus soldanella of modern botany.

[98] Or "rock-cabbage," a name given more properly to the Convolvulus soldanella. [98*] See c. 34, and B. xxiv. c. 1.

[99] A description, really, of the Convolvulus soldanella.

ing, by the stings of serpents, eating fungi, and drinking bulls' blood. The leaves of it, either boiled and taken in the food or else eaten raw, or applied with a liniment of sulphur and nitre, are good for affections of the spleen, as well as hard tumours of the mamillæ. In swelling of the uvula, if the parts affected are only touched with the ashes of the root, a cure will be the result; and applied topically with honey, they are equally beneficial for reducing swellings of the parotid glands, and curing the stings of serpents. We will add only one more proof of the virtues of the cabbage, and that a truly marvellous one—in all vessels in which water is boiled, the incrustations which adhere with such tenacity that it is otherwise impossible to detach them, will fall off immediately if a cabbage is boiled therein.

CHAP. 37.—THE LAPSANA: ONE REMEDY.

Among the wild cabbages, we find also the lapsana,[1] a plant which grows a foot in height, has a hairy leaf, and strongly resembles mustard, were it not that the blossom is whiter. It is eaten cooked, and has the property of soothing and gently relaxing the bowels.

CHAP. 38.—THE SEA-CABBAGE: ONE REMEDY.

Sea-cabbage[2] is the most strongly purgative of all these plants. It is cooked, in consequence of its extreme pungency, with fat meat, and is extremely detrimental to the stomach.

CHAP. 39.—THE SQUILL: TWENTY-THREE REMEDIES.

In medicine, we give the name of white squill to the male plant, and of black[3] to the female: the whiter the squill, the better it is for medicinal[4] purposes. The dry coats being first taken off of it, the remaining part, or so much of it as retains life, is cut into pieces, which are then strung and suspended

[1] See B. xix. c. 41.

[2] The Convolvulus soldanella of Linnæus, Fée thinks: not one of the Cruciferæ, but belonging to the Convolvulaceæ.

[3] See B. xix. c. 30.

[4] The squill is still regarded in medicine as one of the most energetic of all the vegetable productions, as a diuretic, an expectorant, and, in large doses, an emetic. Squill vinegar is still the form in which it is usually administered. Columella gives a somewhat different account of the mode of preparing it.

on a string, at short distances from each other. After these pieces are thoroughly dried, they are thrown into a jar of the very strongest vinegar, suspended in such a way, however, as not to touch any portion of the vessel. This is done forty-eight days before the summer solstice. The mouth of the jar is then tightly sealed with plaster; after which it is placed beneath some tiles which receive the rays of the sun the whole day through. At the end of forty-eight days the vessel is removed, the squills are taken out of it, and the vinegar poured into another jar.

This vinegar has the effect of sharpening the eyesight, and, taken every other day, is good for pains in the stomach and sides: the strength of it, however, is so great, that if taken in too large a quantity, it will for some moments produce all the appearance of death. Squills, too, if chewed by themselves even, are good for the gums and teeth; and taken in vinegar and honey they expel tapeworm and other intestinal worms. Put fresh beneath the tongue, they prevent persons afflicted with dropsy from experiencing thirst.

Squills are cooked in various ways; either in a pot with a lining of clay or grease, which is put into an oven or furnace, or else cut into pieces and stewed in a saucepan. They are dried also in a raw state, and then cut into pieces and boiled with vinegar; in which case, they are employed as a liniment for the stings of serpents. Sometimes, again, they are roasted and then cleaned; after which, the middle of the bulb is boiled again in water.

When thus boiled, they are used for dropsy, as a diuretic, being taken in doses of three oboli, with oxymel: they are employed also in a similar manner for affections of the spleen, and of the stomach, when it is too weak to digest the food, provided no ulcerations have made their appearance; also for gripings of the bowels, jaundice, and inveterate cough, accompanied with asthma. A cataplasm of squill leaves, taken off at the end of four days, has the effect of dispersing scrofulous swellings of the neck; and a decoction of squills in oil, applied as a liniment, is a cure for dandriff and running ulcers of the head.

Squills are boiled with honey also for the table, with the view of aiding the digestion more particularly; used in this way, too, they act upon the inside as a purgative. Boiled

with oil, and then mixed with resin, they are a cure for chaps on the feet; and the seed, mixed with honey, is applied topically, for the cure of lumbago. Pythagoras says that a squill, suspended at the threshold of the door, effectually shuts all access to evil spells and incantations.[5]

CHAP. 40.—BULBS: THIRTY REMEDIES.

Bulbs,[6] steeped in vinegar and sulphur, are good for the cure of wounds in the face;[7] beaten up and used alone, they are beneficial for contractions of the sinews, mixed with wine, for porrigo, and used with honey, for the bites of dogs; in this last case, however, Erasistratus says that they ought to be mixed with pitch. The same author states that, applied topically with honey, they stanch the flowing of blood; other writers say, however, that in cases of bleeding at the nose, coriander and meal should be employed in combination with them. Theodorus prescribes bulbs in vinegar for the cure of lichens, and for eruptions in the head he recommends bulbs mixed with astringent wine, or an egg beaten up; he treats defluxions of the eyes also with bulbs, applied topically, and uses a similar method for the cure of ophthalmia. The red bulbs more particularly, will cause spots in the face to disappear, if rubbed upon them with honey and nitre in the sun; and applied with wine or boiled cucumber they will remove freckles. Used either by themselves, or as Damion recommends, in combination with honied wine, they are remarkably efficacious for the cure of wounds, care being taken, however, not to remove the application till the end of four days. The

[5] Theocritus says that the squill effectually protects statues and tombs from outrages being committed upon them; and it was so customary to plant them about the graves, that it became a proverbial saying, "He is frantic enough to pluck squills from a grave." Theophrastus states that squills were employed in certain expiatory ceremonials.

[6] As to the identification of the "bulbs," see B. xix. c. 30. The wild bulbs, Fée is of opinion, are probably the Nigrum allium or Moly of modern Botany; and the Allium schœnoprasum belongs, in his opinion, to the cultivated bulbs.

[7] Supposing, Fée says, that the Bulbi of the ancients belonged to the genus Allium or garlic of modern Botany, we may conclude that in a medicinal point of view, they were of an exciting nature, powerful vermifuges, and slightly blistering when applied topically. The other statements here made, as to their medicinal qualities, are not consistent with modern experience.

same author prescribes them, too, for the cure of fractured ears, and collections of crude humours in the testes.[8]

For pains in the joints, bulbs are used with meal; boiled in wine, and applied to the abdomen, they reduce hard swellings of the viscera. In dysentery, they are given in wine mixed with rain water; and for convulsions of the intestines they are employed, in combination with silphium, in pills the size of a bean: bruised, they are employed externally, for the purpose of checking perspirations. Bulbs are good, too, for the sinews, for which reason it is that they are given to paralytic patients. The red bulb, mixed with honey and salt, heals sprains of the feet with great rapidity. The bulbs of Megara[9] act as a strong aphrodisiac, and garden bulbs, taken with boiled must or raisin wine, aid delivery.

Wild bulbs, made up into pills with silphium, effect the cure of wounds and other affections of the intestines. The seed, too, of the cultivated kinds is taken in wine as a cure for the bite of the phalangium,[10] and the bulbs themselves are applied in vinegar for the cure of the stings of serpents. The ancients used to give bulb-seed to persons afflicted with madness, in drink. The blossom, beaten up, removes spots upon the legs, as well as scorches produced by fire. Diocles is of opinion that the sight is impaired by the use of bulbs; he adds, too, that when boiled they are not so wholesome as roasted, and that, of whatever nature they may be, they are difficult of digestion.

CHAP. 41.—BULBINE; ONE REMEDY. BULB EMETIC.

The Greeks give the name bulbine[11] to a plant with leaves resembling those of the leek, and a red bulbous root. This plant, it is said, is marvellously good for wounds, but only when they are of recent date. The bulbous plant known as the "emetic" bulb,[12] from the effects which it produces, has dark leaves,[13] and longer than those of the other kinds.

[8] Testium pituitas.

[9] See B. xix. c. 30. Athenæus, B. ii. c. 26, attributes a similar property to the bulbs of Megara.

[10] See B. xi. cc. 24, 28.

[11] The Hyacinthus botryoides of Linnæus, most probably.

[12] "Bulbus vomitorius." The Narcissus jonquilla of Linnæus, the "emetic jonquil." The bulb of the Spanish jonquil acts as a strong emetic.

[13] Dioscorides says, more correctly, a black outer coat or peeling.

CHAP. 42. (10.)—GARDEN ASPARAGUS; WITH THE NEXT TWENTY-FOUR REMEDIES.

Asparagus[14] is said to be extremely wholesome as an aliment to the stomach. With the addition of cummin, it dispels flatulency of the stomach and colon; it sharpens the eyesight also, acts as a mild aperient upon the stomach, and, boiled with wine, is good for pains in the chest and spine, and diseases of the intestines. For pains in the loins and kidneys asparagus-seed[15] is administered in doses of three oboli, taken with an equal proportion of cummin-seed. It acts as an aphrodisiac, and is an extremely useful diuretic, except that it has a tendency to ulcerate the bladder.[16]

The root, also, pounded and taken in white wine, is highly extolled by some writers, as having the effect of disengaging calculi, and of soothing pains in the loins and kidneys; there are some persons, too, who administer this root with sweet wine for pains in the uterus. Boiled in vinegar the root is very beneficial in cases of elephantiasis. It is said that if a person is rubbed with asparagus beaten up in oil, he will never be stung by bees.

CHAP. 43.—CORRUDA, LIBYCUM, OR ORMINUM.

Wild asparagus is by some persons called "corruda," by others "libycum," and by the people of Attica "orminus."[17] For all the affections above enumerated it is more efficacious even than the cultivated kind, that which is white[18] more particularly. This vegetable has the effect of dispelling the jaundice, and a decoction of it, in doses of one hemina, is recommended as an aphrodisiac; a similar effect is produced also by a mixture of asparagus seed and dill in doses of three

[14] Asparagus is recognized in modern times, as exercising a strong action on the kidneys. Fée says, that according to Dr. Broussais, it is a sedative to palpitations of the heart, an assertion, the truth of which, he says, his own experience has confirmed. The root is also looked upon as diuretic.

[15] Asparagus seed is not used in modern pharmacy, and it is very doubtful if it possesses any virtues at all.

[16] Fée says that there is no truth in this assertion.

[17] See B. xix. c. 42: the Asparagus tenuifolius of Linnæus, the wild asparagus, or Corruda of the South of France.

[18] Fée says that in the South of Europe there is a kind, known to botanists as white asparagus, with a prickly stem: he suggests that it may possibly be the same as that here spoken of.

oboli respectively. A decoction of asparagus juice is given also for the stings of serpents; and the root of it, mixed with that of marathrum,[19] is reckoned in the number of the most valuable remedies we are acquainted with.

In cases of hæmaturia, Chrysippus recommends a mixture of asparagus, parsley, and cummin seed, to be given to the patient every five days, in doses of three oboli, mixed with two cyathi of wine. He says, however, that though employed this way, it is a good diuretic, it is bad for dropsy, and acts as an antaphrodisiac; and that it is injurious to the bladder, unless it is boiled first.[21] He states also, that if the water in which it is boiled is given to dogs, it will kill them;[22] and that the juice of the root boiled in wine, kept in the mouth, is an effectual cure for tooth-ache.

CHAP. 44. (11.)—PARSLEY; SEVENTEEN REMEDIES.

Parsley[23] is held in universal esteem; for we find sprigs of it swimming in the draughts of milk given us to drink in country-places; and we know that as a seasoning for sauces, it is looked upon with peculiar favour. Applied to the eyes with honey, which must also be fomented from time to time with a warm decoction of it, it has a most marvellous efficacy in cases of defluxion of those organs or of other parts of the body; as also when beaten up and applied by itself, or in combination with bread or with polenta. Fish, too, when found to be in an ailing state in the preserves, are greatly refreshed by giving them green parsley. As to the opinions entertained upon it among the learned, there is not a single production dug out of the earth in reference to which a greater diversity exists.

[19] Or fennel. Fée says that, till very recently, the roots of asparagus and of fennel were combined in medicine, forming part of the five "major aperitive" roots. The sirop of the five aperitive roots is still used, he says, in medicine.

[21] Chrysippus and Dioscorides were of opinion, that a decoction of asparagus root causes sterility in women; a false notion, which, as Fée remarks, prevailed very generally in Greece.

[23] This is not consistent with fact.

[22] See B. xix. c. 37. Parsley, though possessed of marked properties, is but little employed in medicine. What Pliny here states respecting it, Fée says, is a tissue of fables: but it is still used for the cure of sores, and even as an ophthalmic.

Parsley is distinguished as male and female:[24] according to Chrysippus, the female plant has a hard leaf and more curled than the other, a thick stem, and an acrid, hot taste. Dionysius says, that the female is darker than the other kind, has a shorter root, and engenders small worms.[25] Both of these writers, however, agree in saying that neither kind of parsley should be admitted into the number of our aliments; indeed, they look upon it as nothing less than sacrilege to do so, seeing that parsley is consecrated to the funereal feasts in honour of the dead. They say, too, that it is injurious to the eyesight, that the stalk of the female plant engenders small worms, for which reason it is that those who eat of it become barren—males as well as females; and that children suckled by females who live on a parsley diet, are sure to be epileptic. They agree, however, in stating that the male plant is not so injurious in its effects as the female, and that it is for this reason that it is not absolutely condemned and classed among the forbidden plants. The leaves of it, employed as a cataplasm, are used for dispersing hard tumours[26] in the mamillæ; and when boiled in water, it makes it more agreeable to drink. The juice of the root more particularly, mixed with wine, allays the pains of lumbago, and, injected into the ears, it diminishes hardness of hearing. The seed of it acts as a diuretic, promotes the menstrual discharge, and brings away the afterbirth.

Bruises and livid spots, if fomented with a decoction of parsley-seeed, will resume their natural colour. Applied topically, with the white of egg, or boiled in water, and then drunk, it is remedial for affections of the kidneys; and beaten up in cold water it is a cure for ulcers of the mouth. The seed, mixed with wine, or the root, taken with old wine, has the effect of breaking calculi in the bladder. The seed, too, is given in white wine, to persons afflicted with the jaundice.

CHAP. 45.—APIASTRUM, OR MELISSOPHYLLUM.

Hyginus gave the name of "apiastrum" to melissophyllum:[27] but that which grows in Sardinia is poisonous, and

[24] This distinction, Fée says, cannot be admitted.

[25] Or maggots.

[26] This belief in its efficacy, Fée says, still exists.

[27] See B. xxi. c. 86: this is the Melissa officinalis of Linnæus, or balm-

universally condemned. I speak here of this plant, because I feel it my duty to place before the reader every object which has been classified, among the Greeks, under the same name.

CHAP. 46.—OLUSATRUM OR HIPPOSELINON: ELEVEN REMEDIES. OREOSELINON; TWO REMEDIES. HELIOSELINON; ONE REMEDY.

Olusatrum,[28] usually known as hipposelinon,[29] is particularly repulsive to scorpions. The seed of it, taken in drink, is a cure for gripings in the stomach and intestinal complaints, and a decoction of the seed, drunk in honied wine, is curative in cases of dysuria.[30] The root of the plant, boiled in wine, expels calculi of the bladder, and is a cure for lumbago and pains in the sides. Taken in drink and applied topically, it is a cure for the bite of a mad dog, and the juice of it, when drunk, is warming for persons benumbed with cold.

Some persons make out oreoselinon[31] to be a fourth species of parsley: it is a shrub about a palm in height, with an elongated seed, bearing a strong resemblance to that of cummin, and efficacious for the urine and the catamenia. Helioselinon[32] is possessed of peculiar virtues against the bites of spiders: and oreoselinon is used with wine for promoting the menstrual discharge.

CHAP. 47. (12.)—PETROSELINON; ONE REMEDY. BUSELINON; ONE REMEDY.

Another kind again, which grows in rocky places, is known by some persons as "petroselinon:"[33] it is particularly good for abscesses, taken in doses of two spoonfuls of the juice to one cyathus of juice of horehound, mixed with three cyathi of warm water. Some writers have added buselinon[34] to the list,

gentle, from which the bees gather honey, quite a different plant to apiastrum or wild parsley. The Sardinian plant here mentioned, is probably the same as the Ranunculus, mentioned in B. xxv. c. 109, where its identification will be further discussed.

[28] See B. xix. c. 48.

[29] Or "horse parsley."

[30] Or strangury. No medicinal use is made of this plant in modern times.

[31] Or "mountain parsley," see B. xix. c. 48.

[32] Or "marsh-parsley," see B. xix. c. 37. It is possessed of certain energetic properties, more appreciated by the ancient physicians than in modern pharmacy.

[33] "Rock-parsley:" from this name comes our word "parsley." It is not clearly known to what variety of parsley he refers under this name.

[34] Or "ox-parsley." C. Bauhin identifies this with the Petroselinum Cre-

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which differs only from the cultivated kind in the shortness of the stalk and the red colour of the root, the medicinal properties being just the same. Taken in drink or applied topically, it is an excellent remedy for the stings of serpents.

CHAP. 48.—OCIMUM; THIRTY-FIVE REMEDIES.

Chrysippus has exclaimed as strongly, too, against ocimum[35] as he has against parsley, declaring that it is prejudicial to the stomach and the free discharge of the urine, and is injurious to the sight; that it produces insanity, too, and lethargy, as well as diseases of the liver; and that it is for this reason that goats refuse to touch it. Hence he comes to the conclusion, that the use of it ought to be avoided by man. Some persons go so far as to say, that if beaten up, and then placed beneath a stone, a scorpion will breed there;[36] and that if chewed, and then placed in the sun, worms will breed in it. The people of Africa maintain, too, that if a person is stung by a scorpion the same day on which he has eaten ocimum, his life cannot possibly be saved. Even more than this, there are some who assert, that if a handful of ocimum is beaten up with ten sea or river crabs, all the scorpions in the vicinity will be attracted to it. Diodotus, too, in his Book of Recipes,[37] says, that ocimum, used as an article of food, breeds lice.

Succeeding ages, again, have warmly defended this plant; it has been maintained, for instance, that goats do eat it, that the mind of no one who has eaten of it is at all affected, and, that mixed with wine, with the addition of a little vinegar, it is a cure for the stings of land scorpions, and the venom of those found in the sea. Experience has proved, too, that the smell of this plant in vinegar is good for fainting fits and lethargy,

ticum or Agriopastinaca of Crete; but, as Fée remarks, it is not clear to which of the Umbelliferæ he refers under that name.

[35] The Ocimum basilicum of Linnæus, according to most commentators: though Fée is not of that opinion, it being originally from India, and never found in a wild state. From what Varro says, De Re Rust. B. i. c. 31, he thinks that it must be sought among the leguminous plants, the genus Hedysarum, Lathyrus, or Medicago. He remarks also, that Pliny is the more to be censured for the absurdities contained in this Chapter, as the preceding writers had only mentioned them to ridicule them.

[36] See B. ix. c. 51.

[37] "In Empericis."

as well as inflammations; that employed as a cooling liniment, with rose oil, myrtle oil, or vinegar, it is good for headache; and that applied topically with wine, it is beneficial for defluxions of the eyes. It has been found also, that it is good for the stomach; that taken with vinegar, it dispels flatulent eructations; that applications of it arrest fluxes of the bowels; that it acts as a diuretic, and that in this way it is good for jaundice and dropsy, as well as cholera and looseness of the bowels.

Hence it is that Philistio has prescribed it even for cœliac affections, and boiled, for dysentery. Some persons, too, though contrary to the opinion of Plistonicus, have given it in wine for tenesmus and spitting of blood, as also for obstructions of the viscera. It is employed, too, as a liniment for the mamillæ, and has the effect of arresting the secretion of the milk. It is very good also for the ears of infants, when applied with goose-grease more particularly. The seed of it, beaten up, and inhaled into the nostrils, is provocative of sneezing, and applied as a liniment to the head, of running at the nostrils: taken in the food, too, with vinegar, it purges the uterus. Mixed with copperas[38] it removes warts. It acts, also, as an aphrodisiac, for which reason it is given to horses and asses at the season for covering.

(13.) Wild ocimum has exactly the same properties in every respect, though in a more active degree. It is particularly good, too, for the various affections produced by excessive vomiting, and for abscesses of the womb. The root, mixed with wine, is extremely efficacious for bites inflicted by wild beasts.

CHAP. 49.—ROCKET: TWELVE REMEDIES.

The seed of rocket[39] is remedial for the venom of the scorpion and the shrew-mouse: it repels, too, all parasitical insects which breed on the human body, and applied to the face, as a liniment, with honey, removes[40] spots upon the skin. Used with vinegar, too, it is a cure for freckles; and mixed with ox-gall it restores the livid marks left by wounds to their

[38] "Atramento sutorio."

[39] The Brassica eruca of Linnæus.

[40] None of the numerous remedies mentioned by Pliny for removing spots on the skin, are at all efficacious, in Fée's opinion.

natural colour. It is said that if this plant is taken in wine by persons who are about to undergo a flogging, it will impart a certain degree of insensibility to the body. So agreeable is its flavour as a savouring for food, that the Greeks have given it the name of "euzomon."[41] It is generally thought that rocket, lightly bruised, and employed as a fomentation for the eyes, will restore the sight to its original goodness, and that it allays coughs in young infants. The root of it, boiled in water, has the property of extracting the splinters of broken bones.

As to the properties of rocket as an aphrodisiac, we have mentioned them already.[42] Three leaves of wild rocket plucked with the left hand, beaten up in hydromel, and then taken in drink, are productive of a similar effect.

CHAP. 50.—NASTURTIUM: FORTY-TWO REMEDIES.

Nasturtium,[43] on the other hand, is an antiaphrodisiac;[44] it has the effect also of sharpening the senses, as already stated.[45] There are two[46] varieties of this plant: one of them is purgative, and, taken in doses of one denarius to seven of water, carries off the bilious secretions. Applied as a liniment to scrofulous sores, with bean-meal, and then covered with a cabbage-leaf, it is a most excellent remedy. The other kind, which is darker than the first, has the effect of carrying off vicious humours of the head, and sharpening the sight: taken in vinegar it calms the troubled spirits, and, drunk with wine or taken in a fig, it is good for affections of the spleen; taken in honey, too, fasting daily, it is good for a cough. The seed of it, taken in wine, expels all kinds of intestinal worms, and with the addition of wild mint, it acts more efficaciously still. It is good, too, for asthma and cough, in combination with wild marjoram and sweet wine; and a decoction of it in goats' milk is used for pains in the chest. Mixed with

41 "Good for sauces." 42 In B. xix. c. 44.

43 The Lepidium sativum of Linnæus, cresses or nose-smart.

44 This opinion is corroborated by Dioscorides, B. ii. c. 185, and confirmed by the author of the Geoponica, B. xii. c. 27. Fée inclines to the opinion of Dioscorides, and states that is highly antiscorbutic.

45 In B. xix. c. 44.

46 The two varieties, the white and the black, are no longer distinguished. The only variety now recognized, Fée says, is that with crisped leaves.

pitch it disperses tumours, and extracts thorns from the body; and, employed as a liniment, with vinegar, it removes spots upon the body. When used for the cure of carcinoma, white of eggs is added to it. With vinegar it is employed also as a liniment for affections of the spleen, and with honey it is found to be very useful for the complaints of infants.

Sextius adds, that the smell of burnt nasturtium drives away serpents, neutralizes the venom of scorpions, and gives relief in head-ache; with the addition too, of mustard, he says, it is a cure for alopecy, and applied to the ears with a fig, it is a remedy for hardness of hearing. The juice of it, he says, if injected into the ears, will effect the cure of tooth-ache, and employed with goose-grease it is a remedy for porrigo and ulcerous sores of the head. Applied with leaven it brings boils[47] to a head, and makes carbuncles suppurate and break: used with honey, too, it is good for cleansing phagedænic ulcers. Topical applications are made of it, combined with vinegar and polenta, in cases of sciatica aud lumbago: it is similarly employed, too, for lichens and malformed[48] nails, its qualities being naturally caustic. The best nasturtium of all is that of Babylonia; the wild[49] variety possesses the same qualities as the cultivated in every respect, but in a more powerful degree.

CHAP. 51.—RUE: EIGHTY-FOUR REMEDIES.

One of the most active, however, of all the medicinal plants, is rue.[50] The cultivated kind has broader leaves and more numerous branches than the other. Wild rue is more violent in its effects, and more active in every respect. The juice of it is extracted by beating it up, and moistening it moderately with water; after which it is kept for use in

[47] "Furunculos." Gangrenous sores, probably.

[48] "Unguibus scabris," *i. e.* for the removal of malformed nails, with the view to the improvement of their appearance.

[49] The Lepidium Iberis of Linnæus, Fée thinks.

[50] The Ruta graveolens of Linnæus. The Romans, singularly enough, valued this offensive plant as a condiment for their dishes, and a seasoning for their wines.—See B. xiv. c. 19: and at the present day even, it is admired for its smell, Fée says, by the ladies of Naples. The Italians use it also for their salads. Its smell is thought to prevent infection, for which reason it is still used, in country-places, at funerals, and is placed before prisoners when tried criminally, for the prevention, it is said, of gaol fever.

boxes of Cyprian copper. Given in large doses, this juice has all the baneful effects of poison,[51] and that of Macedonia more particularly, which grows on the banks of the river Aliacmon.[52] It is a truly wonderful thing, but the juice of hemlock has the property of neutralizing its effects. Thus do we find one thing acting as the poison of another poison, for the juice of hemlock is very beneficial, rubbed upon the hands and [face][53] of persons employed in gathering rue.

In other respects, rue is one of the principal ingredients employed in antidotes, that of Galatia more particularly. Every species of rue, employed by itself, has the effect also of an antidote, if the leaves are bruised and taken in wine. It is good more particularly in cases of poisoning by wolf'sbane[54] and mistletoe, as well as by fungi, whether administered in the drink or the food. Employed in a similar manner, it is good for the stings of serpents; so much so, in fact, that weasels,[55] when about to attack them, take the precaution first of protecting themselves by eating rue. Rue is good, too, for the injuries by scorpions and spiders, the stings of bees, hornets, and wasps, the noxious effects produced by cantharides and salamanders,[56] and the bites of mad dogs. The juice is taken in doses of one acetabulum, in wine; and the leaves, beaten up or else chewed, are applied topically, with honey and salt, or boiled with vinegar and pitch. It is said that people rubbed with the juice of rue, or even having it on their person, are never attacked by these noxious creatures, and that serpents are driven away by the stench of burning rue. The most efficacious, however, of all, is the root of wild rue, taken with wine; this too, it is said, is more beneficial still, if drunk in the open air.

Pythagoras has distinguished this plant also into male and

[51] It is not the rue that has this effect, so much as the salts of copper which are formed.

[52] Fée thinks it not likely that the rue grown here was at all superior to that of other localities.

[53] This word, omitted in the text, is supplied from Dioscorides.

[54] Or aconite. There is no truth whatever in these assertions, that rue has the effect of neutralizing the effects of hemlock, henbane, or poisonous fungi. Boerrhave says that he employed rue successfully in cases of hysteria and epilepsy; and it is an opinion which originated with Hippocrates, and is still pretty generally entertained, that it promotes the catamenia.

[55] See B. viii. c. 40.

[56] See B. x. c. 86.

female, the former having smaller leaves than the other, and of a grass-green colour; the female plant, he says, has leaves of a larger size and a more vivid hue. The same author, too, has considered rue to be injurious to the eyes; but this is an error, for engravers and painters are in the habit of eating it with bread, or else nasturtium, for the benefit of the sight; wild goats, too, eat it for the sight, they say. Many persons have dispersed films on the eyes by rubbing them with a mixture of the juice of rue with Attic honey, or the milk of a woman just delivered of a male child: the same result has been produced also by touching the corners of the eyes with the pure juice of the plant. Applied topically, with polenta, rue carries off defluxions of the eyes; and, taken with wine, or applied topically with vinegar and rose oil, it is a cure for head-ache. If, however, the pain attacks the whole of the head,[57] the rue should be applied with barley-meal and vinegar. This plant has the effect also of dispelling crudities, flatulency, and inveterate pains of the stomach; it opens the uterus, too, and restores it when displaced; for which purpose it is applied as a liniment, with honey, to the whole of the abdomen and chest. Mixed with figs, and boiled down to one half, it is administered in wine for dropsy; and it is taken in a similar manner for pains of the chest, sides, and loins, as well as for coughs, asthma, and affections of the lungs, liver, and kidneys, and for shivering fits. Persons about to indulge in wine, take a decoction of the leaves, to prevent head-ache and surfeit. Taken in food, too, it is wholesome, whether eaten raw or boiled, or used as a confection; boiled with hyssop, and taken with wine, it is good for gripings of the stomach. Employed in the same way, it arrests internal hæmorrhage, and, applied to the nostrils, bleeding at the nose: it is beneficial also to the teeth if rinsed with it. In cases of ear-ache, this juice is injected into the ears, care being taken to moderate the dose, as already stated, if wild rue is employed. For hardness of hearing, too, and singing in the ears, it is similarly employed in combination with oil of roses, or oil of laurel, or else cummin and honey.

Juice of rue pounded in vinegar, is applied also to the temples and the region of the brain in persons affected with phrenitis; some persons, however, have added to this mixture

[57] "Si vere sit cephalæa."

wild thyme and laurel leaves, rubbing the head and neck as well with the liniment. It has been given in vinegar to lethargic patients to smell at, and a decoction of it is administered for epilepsy, in doses of four cyathi, as also just before the attacks in fever of intolerable chills. It is likewise given raw to persons for shivering fits Rue is a provocative[58] of the urine to bleeding even: it promotes the menstrual discharge, also, and brings away the after-birth, as well as the dead fœtus even, according to Hippocrates,[59] if taken in sweet red wine. The same author, also, recommends applications of it, as well as fumigations, for affections of the uterus.

For cardiac diseases, Diocles prescribes applications of rue, in combination with vinegar, honey, and barley-meal: and for the iliac passion, he says that it should be mixed with meal, boiled in oil, and spread upon the wool of a sheep's fleece. Many persons recommend, for purulent expectorations, two drachmæ of dried rue to one and a half of sulphur; and, for spitting of blood, a decoction of three sprigs in wine. It is given also in dysentery, with cheese, the rue being first beaten up in wine; and it has been prescribed, pounded with bitumen, as a potion for habitual shortness of breath. For persons suffering from violent falls, three ounces of the seed is recommended. A pound of oil, in which rue leaves have been boiled, added to one sextarius of wine, forms a liniment for parts of the body which are frost-bitten. If rue really is a diuretic, as Hippocrates[60] thinks, it is a singular thing that some persons should give it, as being an anti-diuretic, for the suppression of incontinence of urine.

Applied topically, with honey and alum, it cures itch-scabs, and leprous sores; and, in combination with nightshade and hogs'-lard, or beef-suet, it is good for morphew, warts, scrofula, and maladies of a similar nature. Used with vinegar and oil, or else white lead, it is good for erysipelas; and, applied with vinegar, for carbuncles. Some persons prescribe silphium also as an ingredient in the liniment; but it is not employed by them for the cure of the pustules known as epinyctis. Boiled rue is recommended, also, as a cataplasm for swellings

[58] Dioscorides says however, B. iii. c. 52, that it arrests incontinence of the urine. See below.

[59] De Morb. Mul. B. i. c. 128.

[60] De Diæta, B. ii. c. 26.

of the mamillæ, and, combined with wax, for eruptions of pituitous matter.[61] It is applied with tender sprigs of laurel, in cases of defluxion of the testes; and it exercises so peculiar an effect upon those organs, that old rue, it is said, employed in a liniment, with axle-grease, is a cure for hernia. The seed pounded, and applied with wax, is remedial also for broken limbs. The root of this plant, applied topically, is a cure for effusion of blood in the eyes, and, employed as a liniment, it removes scars or spots on all parts of the body.

Among the other properties which are attributed to rue, it is a singular fact, that, though it is universally agreed that it is hot by nature, a bunch of it, boiled in rose-oil, with the addition of an ounce of aloes, has the effect of checking the perspiration in those who rub themselves with it; and that, used as an aliment, it impedes the generative functions. Hence it is, that it is so often given in cases of spermatorrhœa, and where persons are subject to lascivious dreams. Every precaution should be taken by pregnant women to abstain from rue as an article of diet, for I find it stated that it is productive of fatal results to the fœtus.[62]

Of all the plants that are grown, rue is the one that is most generally employed for the maladies of cattle, whether arising from difficulty of respiration, or from the stings of noxious creatures—in which cases it is injected with wine into the nostrils—or whether they may happen to have swallowed a horse-leech, under which circumstances it is administered in vinegar. In all other maladies of cattle, the rue is prepared just as for man in a similar case.

CHAP. 52. (14.)—WILD MINT: TWENTY REMEDIES.

Mentastrum, or wild mint,[63] differs from the other kind in the appearance of the leaves, which have the form of those of ocimum and the colour of pennyroyal; for which reason, some persons, in fact, give it the name of wild pennyroyal.[64] The leaves of this plant, chewed and applied topically, are a cure for elephantiasis; a discovery which was accidentally made in

[61] "Pituitæ eruptionibus."

[62] This prejudice, Fée says, still survives.

[63] The Menta silvestris of Linnæus; though Clusius was of opinion that it is the Nepeta tuberosa of Linnæus.

[64] "Silvestre puleium."

the time of Pompeius Magnus, by a person affected with this malady covering his face with the leaves for the purpose of neutralizing the bad smell that arose therefrom. These leaves are employed also as a liniment, and in drink, with a mixture of salt, oil, and vinegar, for the stings of scorpions; and, in doses of two drachmæ to two cyathi of wine, for those of scolopendræ and serpents. A decoction, too, of the juice is given for the sting of the scolopendra.[65] Leaves of wild mint are kept, dried and reduced to a fine powder, as a remedy for poisons of every description. Spread on the ground or burnt, this plant has the effect of driving away scorpions.

Taken in drink, wild mint carries off the lochia in females after parturition; but, if taken before, it is fatal to the fœtus. It is extremely efficacious in cases of rupture and convulsions, and, though in a somewhat less degree, for orthopnœa,[66] gripings of the bowels, and cholera: it is good, too, as a topical application for lumbago and gout. The juice of it is injected into the ears for worms breeding there; it is taken also for jaundice, and is employed in liniments for scrofulous sores. It prevents[67] the recurrence of lascivious dreams; and taken in vinegar, it expels tape-worm.[68] For the cure of porrigo, it is put in vinegar, and the head is washed with the mixture in the sun.

CHAP. 53.—MINT: FORTY-ONE REMEDIES.

The very smell of mint[69] reanimates the spirits, and its flavour gives a remarkable zest to food: hence it is that it is so generally an ingredient in our sauces. It has the effect of preventing milk from turning sour, or curdling and thickening; hence it is that it is so generally put into milk used for drinking, to prevent any danger of persons being choked[70] by it in a

[65] Galen and Dioscorides say the same; but it is not the fact; the leaves being of no utility whatever.

[66] Difficulty of breathing, unless the neck is kept in a straight position.

[67] Fée is inclined to think exactly the contrary.

[68] Its properties as a vermifuge are contested.

[69] According to ancient fable, Mintha, the daughter of Cocytus, and beloved by Pluto, was changed by Proserpine into this plant: it was generally employed also in the mysteries of the Grecks. It is the Mentha sativa of Linnæus.

[70] Fée says that this passage alone would prove pretty clearly that Pliny had no idea of the existence of the gastric juices.

curdled state. It is administered also for this purpose in water or honied wine. It is generally thought, too, that it is in consequence of this property that it impedes generation, by preventing the seminal fluids from obtaining the requisite consistency. In males as well as females it arrests bleeding, and it has the property, with the latter, of suspending the menstrual discharge. Taken in water, with amylum,[71] it prevents looseness in cœliac complaints. Syriation employed this plant for the cure of abscesses of the uterus, and, in doses of three oboli, with honied wine, for diseases of the liver: he prescribed it also, in pottage, for spitting of blood. It is an admirable remedy for ulcerations of the head in children, and has the effect equally of drying the trachea when too moist, and of bracing it when too dry. Taken in honied wine and water, it carries off purulent phlegm.

The juice of mint is good for the voice when a person is about to engage in a contest of eloquence, but only when taken just before. It is employed also with milk as a gargle for swelling of the uvula, with the addition of rue and coriander. With alum, too, it is good for the tonsils of the throat, and, mixed with honey, for roughness of the tongue. Employed by itself, it is a remedy for internal convulsions and affections of the lungs. Taken with pomegranate juice, as Democrites tells us, it arrests hiccup and vomiting. The juice of mint fresh gathered, inhaled, is a remedy for affections of the nostrils. Beaten up and taken in vinegar, mint is a cure for cholera, and for internal fluxes of blood: applied externally, with polenta, it is remedial for the iliac passion and tension of the mamillæ. It is applied, too, as a liniment to the temples for head-ache; and it is taken internally, as an antidote for the stings of scolopendræ, sea-scorpions, and serpents. As a liniment it is applied also for defluxions of the eyes, and all eruptions of the head, as well as maladies of the rectum.

Mint is an effectual preventive, too, of chafing of the skin, even if held in the hand only. In combination with honied wine, it is employed as an injection for the ears. It is said, too, that this plant will cure affections of the spleen, if tasted in the garden nine days consecutively, without plucking it, the person who bites it saying at the same moment that he does so for the benefit of the spleen: and that, if dried, and re-

[71] See B. xviii. c. 17, and B. xxii. c. 67.

duced to powder, a pinch of it with three fingers taken in water, will cure stomach-ache.[72] Sprinkled in this form in drink, it is said to have the effect of expelling intestinal worms.

CHAP 54.—PENNYROYAL: TWENTY-FIVE REMEDIES.

Pennyroyal[73] partakes with mint, in a very considerable degree, the property[74] of restoring consciousness in fainting fits; slips of both plants being kept for the purpose in glass bottles[75] filled with vinegar. It is for this reason that Varro has declared that a wreath of pennyroyal is more worthy to grace our chambers[76] than a chaplet of roses: indeed, it is said that, placed upon the head, it materially alleviates head-ache.[77] It is generally stated, too, that the smell of it alone will protect the head against the injurious effects of cold or heat, and that it acts as a preventive of thirst; also, that persons exposed to the sun, if they carry a couple of sprigs of pennyroyal behind the ears, will never be incommoded by the heat. For various pains, too, it is employed topically, mixed with polenta and vinegar.

The female[78] plant is the more efficacious of the two; it has a purple flower, that of the male being white. Taken in cold water with salt and polenta it arrests nausea, as well as pains of the chest and abdomen. Taken, too, in water, it prevents gnawing pains of the stomach, and, with vinegar and polenta, it arrests vomiting. In combination with salt and vinegar, and polenta, it loosens the bowels. Taken with boiled honey and nitre, it is a cure for intestinal complaints. Employed

[72] It is only in this case and the next, Fée says, that modern experience agrees with our author as to the efficacy of mint.

[73] The Menta pulegium of Linnæus.

[74] Its medicinal properties are similar to those of mint; which is a good stomachic, and is useful for hysterical and hypochondriac affections, as well as head-ache. We may therefore know how far to appreciate the medicinal virtues ascribed by Pliny to these plants.

[75] "Ampullas."

[76] "Cubiculis:" "sleeping-chambers." It was very generally the practice among the ancients to keep odoriferous plants in their bed-rooms; a dangerous practice, now held in pretty general disesteem.

[77] Strong odours, as Fée remarks, are not generally beneficial for head-ache.

[78] Dioscorides makes no such distinction, and botanically speaking, as Fée observes, this distinction is faulty.

with wine it is a diuretic, and if the wine is the produce of the Aminean[79] grape, it has the additional effect of dispersing calculi of the bladder and removing all internal pains. Taken in conjunction with honey and vinegar, it modifies the menstrual discharge, and brings away the after-birth, restores the uterus, when displaced, to its natural position, and expels the dead[80] fœtus. The seed is given to persons to smell at, who have been suddenly struck dumb, and is prescribed for epileptic patients in doses of one cyathus, taken in vinegar. If water is found unwholesome for drinking, bruised pennyroyal should be sprinkled in it; taken with wine it modifies acridities[81] of the body.

Mixed with salt, it is employed as a friction for the sinews, and with honey and vinegar, in cases of opisthotony. Decoctions of it are prescribed as a drink for persons stung by serpents; and, beaten up in wine, it is employed for the stings of scorpions, that which grows in a dry soil in particular. This plant is looked upon as efficacious also for ulcerations of the mouth, and for coughs. The blossom of it, fresh gathered, and burnt, kills fleas[82] by its smell. Xenocrates, among the other remedies which he mentions, says that in tertian fevers, a sprig of pennyroyal, wrapped in wool, should be given to the patient to smell at, just before the fit comes on, or else it should be put under the bed-clothes and laid by the patient's side.

CHAP. 55.—WILD PENNYROYAL: SEVENTEEN REMEDIES.

For all the purposes already mentioned, wild pennyroyal[83] has exactly the same properties, but in a still higher degree. It bears a strong resemblance to wild marjoram,[84] and has a smaller leaf than the cultivated kind: by some persons it is known as "dictamnos."[85] When browsed upon by sheep and goats, it makes them bleat, for which reason, some of the

[79] See B. xiv. c. 5.

[80] "Defunctos partus" is certainly a better reading than "defunctis partus," though the latter is the one adopted by Sillig.

[81] "Salsitudines." Hardouin is probably right in his conjecture, that the correct reading is "lassitudines," "lassitude."

[82] "Pulices." It is to this belief, no doubt, that it owes its Latin name "pulegium," and its English appellation, "flea-bane."

[83] It differs in no respect whatever from the cultivated kind, except that the leaves of the latter are somewhat larger.

[84] Or origanum.

[85] Whence our name "dittany."

Greeks, changing a single letter in its name, have called it "blechon,"[86] [instead of "glechon."]

This plant is naturally so heating as to blister the parts of the body to which it is applied. For a cough which results from a chill, it is a good plan for the patient to rub himself with it before taking the bath; it is similarly employed, too, in shivering fits, just before the attacks come on, and for convulsions and gripings of the stomach. It is also remarkably good for the gout.

To persons afflicted with spasms, this plant is administered in drink, in combination with honey and salt; and it renders expectoration easy in affections of the lungs.[87] Taken with salt it is beneficial for the spleen and bladder, and is curative of asthma and flatulency. A decoction of it is equally as good as the juice: it restores the uterus when displaced, and is prescribed for the sting of either the land or the sea scolopendra, as well as the scorpion. It is particularly good, too, for bites inflicted by a human being. The root of it, newly taken up, is extremely efficacious for corroding ulcers, and in a dried state tends to efface the deformities produced by scars.

CHAP. 56.—NEP: NINE REMEDIES.

Nep[88] has also some affinity in its effects with pennyroyal. Boiled down in water to one third, these plants dispel sudden chills: they promote the menstrual discharge also in females, and allay excessive heats in summer. Nep possesses certain virtues against the stings of serpents; at the very smoke and smell of it they will instantly take to flight, and persons who have to sleep in places where they are apprehensive of them, will do well to place it beneath them. Bruised, it is employed topically for lacrymal fistulas[89] of the eye: fresh gathered and

[86] The "bleating plant;" from *βληχάομαι*, "to bleat." Dioscorides, B. ii. c. 36, says the same of cultivated pennyroyal.

[87] "Pulmonum vitia exscreabilia facit."

[88] Or "catmint;" the variety "longifolia," Fée thinks, of the Menta silvestris of Linnæus; or else the Melissa altissima of Sibthorp. Sprengel identifies it with the Thymus Barrelieri, the Melissa Cretica of Linnæus. Dioscorides, B. iii. c. 42, identifies the "Calamintha" of the Greeks with the Nepeta of the Romans. The medicinal properties of Nep, or catmint, are the same as those of the other mints.

[89] "Ægilopiis."

mixed in vinegar with one third part of bread, it is applied as a liniment for head-ache. The juice of it, injected into the nostrils, with the head thrown back, arrests bleeding at the nose, and the root has a similar effect. This last is employed also, with myrtle-seed, in warm raisin wine, as a gargle for the cure of quinsy.

CHAP. 57.—CUMMIN: FORTY-EIGHT REMEDIES. WILD CUMMIN: TWENTY-SIX REMEDIES.

Wild cummin is a remarkably slender plant, consisting of four or five leaves indented like a saw; like the cultivated[90] kind, it is much employed in medicine, among the stomachic remedies more particularly. Bruised and taken with bread, or else drunk in wine and water, it dispels phlegm and flatulency, as well as gripings of the bowels and pains in the intestines. Both varieties have the effect, however, of producing paleness[91] in those who drink these mixtures; at all events, it is generally stated that the disciples of Porcius Latro,[92] so celebrated among the professors of eloquence, used to employ this drink for the purpose of imitating the paleness which had been contracted by their master, through the intensity of his studies: and that Julius Vindex,[93] in more recent times, that assertor of our liberties against Nero, adopted this method of playing upon[94] those who were looking out for a place in his will. Applied in the form of lozenges, or fresh with vinegar, cummin has the effect of arresting bleeding at the nose, and used by

[90] Cummin is the Cuminum cyminum of Linnæus. The seed only is used, and that but rarely, for medicinal purposes, being a strong excitant and a carminative. In Germany, and Turkey, and other parts of the East, cummin-seed is esteemed as a condiment.

[91] Horace, B. i. Epist. 19, says the same; but in reality cummin produces no such effect.

[92] M. Porcius Latro, a celebrated rhetorician of the reign of Augustus, a Spaniard by birth, and a friend and contemporary of the elder Seneca. His school was one of the most frequented at Rome, and he numbered among his scholars the poet Ovid. He died B.C. 4.

[93] The son of a Roman senator, but descended from a noble family in Aquitanian Gaul. When proprætor of Gallia Celtica, he headed a revolt against Nero; but being opposed by Virginius Rufus, he slew himself at the town of Vesontio, now Besançon.

[94] "Captationi" is suggested by Sillig as a preferable reading to "captatione," which last would imply that it was Vindex himself who sought a place by this artifice, in the wills of others.

itself, it is good for defluxions of the eyes. Combined with honey, it is used also for swellings of the eyes. With children of tender age, it is sufficient to apply it to the abdomen. In cases of jaundice, it is administered in white wine, immediately after taking the bath.

(15.) The cummin of Æthiopia,[95] more particularly, is given in vinegar and water, or else as an electuary with honey. It is thought, too, that the cummin of Africa has the peculiar property of arresting incontinence of urine. The cultivated plant is given, parched and beaten up in vinegar, for affections of the liver, as also for vertigo. Beaten up in sweet wine, it is taken in cases, also, where the urine is too acrid; and for affections of the uterus, it is administered in wine, the leaves of it being employed topically as well, in layers of wool. Parched and beaten up with honey, it is used as an application for swellings of the testes, or else with rose oil and wax.

For all the purposes above-mentioned, wild cummin[96] is more efficacious than cultivated; as also, in combination with oil, for the stings of serpents, scorpions, and scolopendræ. A pinch of it with three fingers, taken in wine, has the effect of arresting vomiting and nausea; it is used, too, both as a drink and a liniment for the colic, or else it is applied hot, in dossils of lint,[97] to the part affected, bandages being employed to keep it in its place. Taken in wine, it dispels hysterical affections, the proportions being three drachmæ of cummin to three cyathi of wine. It is used as an injection, too, for the ears, when affected with tingling and singing, being mixed for the purpose with veal suet or honey. For contusions, it is applied as a liniment, with honey, raisins, and vinegar, and for dark freckles on the skin with vinegar.

CHAP. 58.—AMMI: TEN REMEDIES.

There is another plant, which bears a very strong resem-

[95] There would be but little difference, Fée observes, between this and the cummin of other countries, as it is a plant in which little change is effected by cultivation. Dioscorides, B. iii. c. 79, says that the cummin of Æthiopia (by Hippocrates called "royal cummin") has a sweeter smell than the other kinds.

[96] Fée is inclined to identify wild cummin, from the description of it given by Dioscorides, with the Delphinium consolida of Linnæus; but at the same time, he says, it is impossible to speak positively on the subject.

[97] "Penicillis."

blance to cummin, known to the Greeks as "ammi;"[98] some persons are of opinion, that it is the same as the Æthiopian cummin. Hippocrates gives it[99] the epithet of "royal;" no doubt, because he looks upon it as possessed of greater virtues than Egyptian cummin. Many persons, however, consider it to be of a totally different nature from cummin, as it is so very much thinner, and of a much whiter colour. Still, it is employed for just the same purposes as cummin, for we find it used at Alexandria for putting under loaves of bread, and forming an ingredient in various sauces. It has the effect of dispelling flatulency and gripings of the bowels, and of promoting the secretion of the urine and the menstrual discharge. It is employed, also, for the cure of bruises, and to assuage defluxions of the eyes. Taken in wine with linseed, in doses of two drachmæ, it is a cure for the stings of scorpions; and, used with an equal proportion of myrrh, it is particularly good for the bite of the cerastes.[1]

Like cummin, too, it imparts paleness of complexion to those who drink of it. Used as a fumigation, with raisins or with resin, it acts as a purgative upon the uterus. It is said, too, that if women smell at this plant during the sexual congress, the chances of conception will be greatly promoted thereby.

CHAP. 59.—THE CAPPARIS OR CAPER: EIGHTEEN REMEDIES.

We have already spoken[2] of the caper at sufficient length when treating of the exotic plants. The caper which comes[3] from beyond sea should never be used; that of Italy[4] is not so dangerous. It is said, that persons who eat this plant daily, are never attacked by paralysis or pains in the spleen. The root of it, pounded, removes white eruptions of the skin, if

[98] The Ammi Copticum of modern botany.

[99] The Æthiopian cummin, namely, which Pliny himself seems inclined to confound with ammi.

[1] Or "horned" serpent. See B. viii. c. 35, and B. xi. c. 45.

[2] In B. xiii. c. 44.

[3] It is not improbable that under this name he alludes to the carpels of some kind of Euphorbiacea, which bear a resemblance to the fruit of the caper. Indeed, there is one variety of the Euphorbia with an acrid juice, known in this country by the name of the "caper-plant."

[4] The Capparis spinosa, probably, on which the capers used in our sauces are grown.

rubbed with it in the sun. The bark[5] of the root, taken in wine, in doses of two drachmæ, is good for affections of the spleen; the patient, however, must forego the use of the bath. It is said, too, that in the course of thirty-five days the whole of the spleen may be discharged under this treatment, by urine and by stool. The caper is also taken in drink for lumbago and paralysis; and the seed of it boiled, and beaten up in vinegar, or the root chewed, has a soothing effect in tooth-ache. A decoction of it in oil is employed, also, as an injection for ear-ache.

The leaves and the root, fresh out of the ground, mixed with honey, are a cure for the ulcers known as phagedænic. In the same way, too, the root disperses scrofulous swellings; and a decoction of it in water removes imposthumes of the parotid glands, and worms. Beaten up and mixed with barley-meal, it is applied topically for pains in the liver; it is a cure, also, for diseases of the bladder. In combination with oxymel, it is prescribed for tapeworm, and a decoction of it in vinegar removes ulcerations of the mouth. It is generally agreed among writers that the caper is prejudicial to the stomach.

CHAP. 60.—LIGUSTICUM, OR LOVAGE: FOUR REMEDIES.

Ligusticum,[6] by some persons known as "panax," is good for the stomach, and is curative of convulsions and flatulency. There are persons who give this plant the name of "cunila bubula;" but, as we have already[7] stated, they are in error in so doing.

CHAP. 61. (16.)—CUNILA BUBULA: FIVE REMEDIES.

In addition to garden cunila,[8] there are numerous other varieties of it employed in medicine. That known to us as "cunila bubula," has a very similar seed to that of penny-royal. This seed, chewed and applied topically, is good for wounds: the plaster, however, must not be taken off till the fifth day. For the stings of serpents, this plant is taken in wine, and the leaves of it are bruised and applied to the

[5] Until recently, the bark was employed in the Materia Medica, as a diuretic: it is now no longer used.

[6] Or Lovage. See B. xix. c. 50.

[7] In B. xix. c. 50, where he states that Crateuas has given to the wild Ligusticum the name of Cunila bubula, or "ox cunila."

[8] See B. xix. c. 50.

wound; which is also rubbed with them as a friction. The tortoise,[9] when about to engage in combat with the serpent, employs this plant as a preservative against the effects of its sting; some persons, for this reason, have given it the name of "panacea."[10] It has the effect also of dispersing tumours and maladies of the male organs, the leaves being dried for the purpose, or else beaten up fresh and applied to the part affected. For every purpose for which it is employed it combines remarkably well with wine.

CHAP. 62.—CUNILA GALLINACEA, OR ORIGANUM: FIVE REMEDIES.

There is another variety, again, known to our people as "cunila gallinacea,"[11] and to the Greeks as Heracleotic origanum.[12] Beaten up with salt, this plant is good for the eyes; and it is a remedy for cough and affections of the liver. Mixed with meal, and taken as a broth, with oil and vinegar, it is good for pains in the side, and the stings of serpents in particular.

CHAP. 63.—CUNILAGO: EIGHT REMEDIES.

There is a third species, also, known to the Greeks as "male cunila," and to us as "cunilago."[13] This plant has a fœtid smell, a ligneous root, and a rough leaf. Of all the varieties of cunila, this one, it is said, is possessed of the most active properties. If a handful of it is thrown anywhere, all the beetles in the house, they say, will be attracted to it; and, taken in vinegar and water, it is good for the stings of scorpions more particularly. It is stated, also, that if a person is rubbed with three leaves of it, steeped in oil, it will have the effect of keeping all serpents at a distance.

CHAP. 64.—SOFT CUNILA: THREE REMEDIES. LIBANOTIS: THREE REMEDIES.

The variety, on the other hand, known as soft[14] cunila, has a

[9] See B. viii. cc. 41 and 44.

[10] Universal remedy, or "all-heal."

[11] Or "Poultry cunila:" the Origanum Heracleoticum of Linnæus.

[12] See B. xxv. c. 12.

[13] An Umbellifera, Fée says, of the modern genus Conyza. See B. xxi. c. 32.

[14] Fée is of opinion that Pliny has here confounded "cunila" with "conyza," and that he means the *κόνυζα μικρά* of Dioscorides, B. iii. c. 136, the *κόνυζα θῆλυς* of Theophrastus, Hist. Plant. B. vi. c. 2, supposed to be the Inula pulicaria of Linnæus. See B. xxi. c. 32.

more velvety leaf, and branches covered with thorns; when rubbed it has just the smell of honey, and it adheres to the fingers when touched. There is another kind, again, known to us as "libanotis,"[15] a name which it owes to the resemblance of its smell to that of frankincense. Both of these plants, taken in wine or vinegar, are antidotes for the stings of serpents. Beaten up in water, also, and sprinkled about a place, they kill fleas.[16]

CHAP. 65.—CULTIVATED CUNILA; THREE REMEDIES. MOUNTAIN CUNILA; SEVEN REMEDIES.

Cultivated cunila[17] has also its medicinal uses. The juice of it, in combination with rose oil, is good for the ears; and the plant itself is taken in drink, to counteract the effects of violent blows.[18]

A variety of this plant is the mountain cunila, similar to wild thyme in appearance, and particularly efficacious for the stings of serpents. This plant is diuretic, and promotes the lochial discharge: it aids the digestion, too, in a marvellous degree. Both varieties have a tendency to sharpen the appetite, even when persons are troubled with indigestion, if taken fasting in drink: they are good, too, for sprains, and, taken with barley-meal, and vinegar and water, they are extremely useful for stings inflicted by wasps and insects of a similar nature.

We shall have occasion to speak of other varieties of libanotis[19] in their appropriate places.

CHAP. 66. (17.)—PIPERITIS, OR SILIQUASTRUM: FIVE REMEDIES.

Piperitis,[20] which we have already mentioned as being called "siliquastrum," is taken in drink for epilepsy. Castor[21] used to give a description of it to the following effect: "The stalk of it is long and red, with the knots lying close together; the leaves are similar to those of the laurel, and the seed is white

[15] A variety of Conyza. See B. xxi. c. 32.

[16] Dioscorides, B. iii. c. 136, says the same of the κόνυζα μικρά, or "small conyza."

[17] The Satureia thymbra of Linnæus. See B. xix. c. 50.

[18] "Ictus," possibly "stings."

[19] See the preceding Chapter: also B. xix. c. 62, and B. xxi. c. 32.

[20] Perhaps Indian pepper, the Capsicum annuum of Botany. See B. xix. c. 62.

[21] For some account of Castor, the botanist, see the end of this Book.

and slender, like pepper in taste." He described it also as being beneficial to the gums and teeth, imparting sweetness to the breath, and dispelling flatulency.

CHAP. 67.—ORIGANUM, ONITIS, OR PRASION: SIX REMEDIES.

Origanum,[22] which, as we have already stated, rivals cunila in flavour, includes many varieties employed in medicine. Onitis,[23] or prasion,[24] is the name given to one of these, which is not unlike hyssop in appearance: it is employed more particularly, with warm water, for gnawing pains at the stomach, and for indigestion. Taken in white wine it is good for the stings of spiders and scorpions; and, applied with vinegar and oil, in wool, it is a cure for sprains and bruises.

CHAP. 68.—TRAGORIGANUM: NINE REMEDIES.

Tragoriganum[25] bears a strong resemblance to wild thyme. It is diuretic, disperses tumours, and taken in drink is extremely efficacious in cases of poisoning by mistletoe and stings by serpents. It is very good for acid eructations from the stomach, and for the thoracic organs. It is given also for a cough, with honey, as well as for pleurisy and peripneumony.

CHAP. 69.—THREE VARIETIES OF HERACLEOTIC ORIGANUM: THIRTY REMEDIES.

Heraclium,[26] again, comprehends three varieties; the first,[27]

[22] Or Wild Marjoram. See B. xix. c. 50.

[23] So called, Nicander says, from being sought with avidity by the ass, ὄνος. It is the Origanum onites of Linnæus.

[24] The Prasion, or "green plant," mentioned by Hippocrates and Theophrastus, is *not* identical, Fée says, with the Origanum onitis, it being the Marrubium Creticum, or peregrinum of modern botanists. To add to the confusion of these names, we find Pliny stating, in c. 69, that the name of "prasion" was given also by the Greeks to his second species of Heraclium, and that of "onitis" to the Heraclium Heracleoticum.

[25] Or "Goat's origanum:" the Thymus tragoriganum of Linnæus. Dioscorides mentions two kinds of tragoriganum, one of which has been supposed by Clusius to be the Thymus mastichina of Linnæus, and the other the Stachys glutinosa of Linnæus; Zanoni being the first author who promulgated this opinion; from which Fée, however, dissents.

[26] Or Heracleotic origanum: see c. 62 of this Book. Pliny here confounds several distinct plants, and, as Fée observes, the whole account is in hopeless confusion.

[27] Probably the Origanum Heracleoticum of Linnæus, mentioned in c. 62.

which is the darkest, has broader leaves than the others, and is of a glutinous nature; the second,[28] which has leaves of a more slender form, and not unlike sampsuchum[28*] in appearance, is by some persous called "prasion," in preference: the third[29] is of an intermediate nature between the other two, but is less efficacious for medicinal purposes than either. But the best kind of all is that of Crete, for it has a particularly agreeable smell; the next best being that of Smyrna, which has even a more powerful odour than the last. The Heracleotic origanum, however, known by the name of "onitis," is the one that is the most esteemed for taking in drink.

Origanum, in general, is employed for repelling serpents; and it is given boiled to persons suffering from wounds. Taken in drink, it is diuretic; and mixed with root of panax, it is given for the cure of ruptures and convulsions. In combination with figs or hyssop, it is prescribed for dropsical patients in doses of one acetabulum, being reduced by boiling to one sixth. It is good also for the itch,[30] prurigo, and leprosy, taken just before the bath. The juice of it is injected into the ears with milk; it being a cure, also, for affections of the tonsils and the uvula, and for ulcers of the head. A decoction of it, taken with the ashes in wine, neutralizes poison by opium or gypsum.[31] Taken in doses of one acetabulum, it relaxes the bowels. It is applied as a liniment for bruises and for tooth-ache; and mixed with honey and nitre, it imparts whiteness to the teeth. It has the effect, also, of stopping bleeding at the nose.

A decoction of this plant, with barley-meal, is employed for imposthumes of the parotid glands; and, beaten up with nut-galls and honey, it is used for roughness of the trachea: the leaves of it, with honey and salt, are good, too, for the spleen. Boiled with vinegar and salt, and taken in small doses, it at-

[28] The Marrubium Creticum, or peregrinum, probably, a variety of horehound. See c. 67.

[28*] See B. xiii. c. 2, and B. xv. c. 7.

[29] The Origanum onites of Linnæus, probably. See c. 67.

[30] Fée says that a strong infusion of pepperwort has been used in France for the itch, with successful results.

[31] Sulphate of lime, which, as Fée remarks, though insoluble, does not act as a poison, but causes a derangement of the digestive functions. The wines of the Romans were extensively treated with this substance, and we have seen in B. xviii. that it was used as an ingredient in their bread.

tenuates the phlegm, when very thick and black; and beaten up with oil, it is injected into the nostrils for jaundice. When persons are affected with lassitude, the body is well rubbed with it, care being taken not to touch the abdomen. Used with pitch, it is a cure for epinyctis, and, applied with a roasted fig, it brings boils to a head. Employed with oil and vinegar, and barley-meal, it is good for scrofulous swellings; and applied topically in a fig, it is a cure for pains in the sides. Beaten up, and applied with vinegar, it is employed as a liniment for bloody fluxes of the generative organs, and it accelerates the lochial discharge after child-birth.

CHAP. 70.—DITTANDER: THREE REMEDIES.

Dittander[32] is generally considered to rank among the caustic plants. It is owing to this property that it clears the skin of the face, not, however, without excoriating it; though, at the same time, the excoriations are easily healed by employing wax and rose oil. It is owing to this property, too, that it always removes, without difficulty, leprous sores and itch-scabs, as well as the scars left by ulcers. It is said, that in cases of tooth-ache, if this plant is attached to the arm on the suffering side, it will have the effect of drawing the pain to it.

CHAP. 71.—GITH, OR MELANTHION: TWENTY-THREE REMEDIES.

Gith[33] is by some Greek writers called "melanthion,"[34] and by others "melaspermon."[35] That is looked upon as the best which has the most pungent odour and is the darkest in appearance. It is employed as a remedy for wounds made by serpents and scorpions: I find that for this purpose it is applied topically with vinegar and honey, and that by burning it serpents are kept at a distance.[36] It is taken, also, in doses of one drachma for the bites of spiders. Beaten up, and smelt at in a piece of linen cloth, it is a cure for running at the nostrils; and, applied as a liniment with vinegar and injected

[32] Dittander, or pepperwort: the Lepidium latifolium of Linnæus.

[33] Or fennel-flower: the Nigella sativa of Linnæus. Fée suggests that its name, "gith," is from the ancient Egyptian.

[34] "Black flower." [35] "Black seed."

[36] It is no longer used in medicine, but it is esteemed as a seasoning in the East. All that Pliny states as to its medicinal properties, Fée considers to be erroneous. The action of the seed is irritating, and reduced to powder, it causes sneezing.

into the nostrils, it dispels head-ache. With oil of iris it is good for defluxions and tumours of the eyes, and a decoction of it with vinegar is a cure for tooth-ache. Beaten up and applied topically, or else chewed, it is used for ulcers of the mouth, and combined with vinegar, it is good for leprous sores and freckles on the skin. Taken in drink, with the addition of nitre, it is good for hardness of breathing, and, employed as a liniment, for indurations, tumours of long standing, and suppurations. Taken several days in succession, it augments the milk in women who are nursing.

The juice of this plant is collected[38] in the same manner as that of henbane; and, like it, if taken in too large doses, it acts as a poison, a surprising fact, seeing that the seed is held in esteem as a most agreeable seasoning for bread.[39] The seed cleanses the eyes also, acts as a diuretic, and promotes the menstrual discharge; and not only this, but I find it stated also, that if thirty grains only are attached to the body, in a linen cloth, it will have the effect of accelerating the after-birth. It is stated, also, that beaten up in urine, it is a cure for corns on the feet; and that when burnt it kills gnats and flies with the smell.

CHAP. 72.—ANISE: SIXTY-ONE REMEDIES.

Anise,[40] too, one of the comparatively small number of plants that have been commended by Pythagoras, is taken in wine, either raw or boiled, for the stings of scorpions. Both green and dried, it is held in high repute, as an ingredient in all seasonings and sauces, and we find it placed beneath the undercrust of bread.[41] Put with bitter-almonds into the cloth strainers[42] for filtering wine, it imparts an agreeable flavour to the wine: it has the effect, also, of sweetening the breath, and removing all bad odours from the mouth, if chewed in the morning with smyrnion[43] and a little honey, the mouth being then rinsed with wine.

This plant imparts a youthful look[44] to the features; and if

[38] See B. xxv. c. 17.
[39] See B. xix. c. 52.
[40] The Pimpinella anisum of Linnæus.
[41] It is still used in some countries as a seasoning with which bread and pastry are powdered.
[42] See B. xiv. c. 28.
[43] See B. xix. cc. 48 and 62: also B. xxvii. c. 97.
[44] This and the next statement are utterly fabulous.

suspended to the pillow, so as to be smelt by a person when asleep, it will prevent all disagreeable dreams. It has the effect of promoting the appetite, also—for this, too, has been made by luxury one of the objects of art, ever since labour has ceased to stimulate it. It is for these various reasons that it has received the name of "anicetum,"[45] given to it by some.

CHAP. 73.—WHERE THE BEST ANISE IS FOUND: VARIOUS REMEDIES DERIVED FROM THIS PLANT.

The most esteemed anise is that of Crete, and, next to it, that of Egypt. This plant is employed in seasonings to supply the place of lovage; and the perfume of it, when burnt and inhaled, alleviates headache. Evenor prescribes an application of the root, pounded, for defluxions of the eyes; and Iollas employs it in a similar manner, in combination with saffron and wine, or else beaten up by itself and mixed with polenta, for violent defluxions and the extraction of such objects as have got into the eyes: applied, too, as a liniment in water, it arrests cancer of the nose. Mixed with hyssop and oxymel, and employed as a gargle, it is a cure for quinsy; and, in combination with rose oil, it is used as an injection for the ears. Parched anise purges off phlegm from the chest, and, if taken with honey, it is better still.

For a cough, beat up fifty bitter almonds, shelled, in honey, with one acetabulum of anise. Another very easy remedy, too, is to mix three drachmæ of anise with two of poppies and some honey, a piece the size of a bean being taken three times a-day. Its main excellence, however, is as a carminative; hence it is that it is so good for flatulency of the stomach, griping pains of the intestines, and cœliac affections. A decoction of it, smelt at and drunk, arrests hiccup, and a decoction of the leaves removes indigestion. A decoction of it with parsley, if applied to the nostrils, will arrest sneezing. Taken in drink, anise promotes sleep, disperses calculi of the bladder, arrests vomiting and swelling of the viscera, and acts as an excellent pectoral for affections of the chest, and of the dia-

[45] "Unconquerable," from the Greek ἀ, "not," and νικάω, "to conquer." Fée thinks that the word is a diminutive of "anisum," which, according to some persons, is a derivative from "*anysun*," the Arabic name of the plant. Dioscorides gives the name "anicetum" to dill, and not to anise.

phragm, where the body is tightly laced. It is beneficial, also, to pour a decoction of it, in oil, upon the head for head-ache.

It is generally thought that there is nothing in existence more beneficial to the abdomen and intestines than anise; for which reason it is given, parched, for dysentery and tenesmus. Some persons add opium to these ingredients, and prescribe three pills a-day, the size of a bean, with one cyathus of wine. Dieuches has employed the juice of this plant for lumbago, and prescribes the seed of it, pounded with mint, for dropsy and cœliac affections: Evenor recommends the root, also, for affections of the kidneys. Dalion, the herbalist, employed it, with parsley, as a cataplasm for women in labour, as also for pains of the uterus; and, for women in labour, he prescribes a decoction of anise and dill to be taken in drink. It is used as a liniment also in cases of phrenitis, or else applied fresh gathered and mixed with polenta; in which form it is used also for infants attacked with epilepsy[46] or convulsions. Pythagoras, indeed, assures us that persons, so long as they hold this plant in the hand, will never be attacked with epilepsy, for which reason, as much of it as possible should be planted near the house; he says, too, that women who inhale the odour of it have a more easy delivery, it being his advice also, that, immediately after they are delivered, it should be given them to drink, with a sprinkling of polenta.

Sosimenes employed this plant, in combination with vinegar, for all kinds of indurations, and for lassitude he prescribes a decoction of it in oil, with the addition of nitre. The same writer pledges his word to all wayfarers, that, if they take aniseed in their drink, they will be comparatively exempt from fatigue[47] on their journey. Heraclides prescribes a pinch of aniseed with three fingers, for inflations of the stomach, to be taken with two oboli of castoreum[48] in honied wine; and he recommends a similar preparation for inflations of the abdomen and intestines. In cases of orthopnœa, he recommends a pinch of aniseed with three fingers, and the same quantity of henbane, to be mixed in asses'-milk. It is the advice of many to those who are liable to vomit,[49] to take, at dinner, one ace-

[46] A mere fable, as Fée remarks.
[47] A fiction, without any foundation in truth.
[48] See B. viii. c. 47, and B. xxxii. cc. 13, 23, 24, and 28.
[49] Fée evidently mistakes the meaning of this passage, and censure.

tabulum of aniseed and ten laurel-leaves, the whole to be beaten up and drunk in water.

Anise, chewed and applied warm, or else taken with castoreum in oxymel, allays suffocations of the uterus. It also dispels vertigo after child-birth, taken with a pinch of cucumber seed in three fingers and the same quantity of linseed, in three cyathi of white wine. Tlepolemus has employed a pinch of aniseed and fennel in three fingers, mixed with vinegar and one cyathus of honey, for the cure of quartan fever. Applied topically with bitter almonds, aniseed is beneficial for maladies of the joints. There are some persons who look upon it as, by nature, an antidote to the venom of the asp. It is a diuretic, assuages thirst, and acts as an aphrodisiac. Taken in wine, it promotes a gentle perspiration, and it has the property of protecting cloth from the ravages of moths. The more recently it has been gathered, and the darker its colour, the greater are its virtues: still, however, it is injurious to the stomach, except when suffering from flatulency.

CHAP. 74. (18.)—DILL: NINE REMEDIES.

Dill[50] acts also as a carminative, allays gripings of the stomach, and arrests looseness of the bowels. The roots of this plant are applied topically in water, or else in wine, for defluxions of the eyes. The seed of it, if smelt at while boiling, will arrest hiccup; and, taken in water, it dispels indigestion. The ashes of it are a remedy for swellings of the uvula; but the plant itself weakens the eyesight and the generative powers.

CHAP 75.—SACOPENIUM, OR SAGAPENON: THIRTEEN REMEDIES.

The sacopenium which grows in Italy is totally different from that which comes from beyond sea. This last, in fact, is similar to gum ammoniac, and is known as "sagapenon."[51]

Pliny for speaking of anise as an emetic. On the contrary, he here prescribes it to counteract vomiting, and he has previously stated, in this Chapter, that it *arrests* vomiting.

[50] The Anethum graveolens of Linnæus: originally a native of the hot climates. Its properties are very similar to those of anise.

[51] Or Sagapenum. This is a fetid gum-resin, imported from Persia and Alexandria, and supposed, though without sufficient proof, Fée says, to be the produce of the Ferula Persica. It is occasionally used in medicine as a stimulating expectorant. In odour it somewhat resembles assafœtida, only it is much weaker. Galen speaks of it as the produce of a Ferula. It acts also as a purgative and a vermifuge.

[52]Sacopenium is good for pains of the sides and chest, for convulsions, coughs of long standing, expectorations, and swellings of the thoracic organs: it is a cure also for vertigo, palsy, opisthotony, affections of the spleen and loins, and for shivering fits. For suffocations of the uterus, this plant is given in vinegar to smell at; in addition to which, it is sometimes administered in drink, or employed as a friction with oil. It is a good antidote, also, for medicaments of a noxious nature.

CHAP. 76.—THE WHITE POPPY: THREE REMEDIES. THE BLACK POPPY: EIGHT REMEDIES. REMARKS ON SLEEP. OPIUM. REMARKS IN DISFAVOUR OF THE POTIONS KNOWN AS "ANODYNES, FEBRIFUGES, DIGESTIVES, AND CŒLIACS." IN WHAT WAY THE JUICES OF THESE PLANTS ARE TO BE COLLECTED.

We have already[53] stated that there are three varieties of the cultivated poppy, and, on the same occasion, we promised to describe the wild kinds. With reference to the cultivated varieties, the calyx[54] of the white[55] poppy is pounded, and is taken in wine as a soporific; the seed of it is a cure, also, for elephantiasis. The black[56] poppy acts as a soporific, by the juice which exudes from incisions[57] made in the stalk—at the time when the plant is beginning to flower, Diagoras says; but when the blossom has gone off, according to Iollas. This is done at the third[58] hour, in a clear, still, day, or, in other words, when the dew has thoroughly dried upon the poppy. It is recommended to make the incision just beneath the head

[52] See B. xii. c. 56, and B. xix. c. 52. Some writers have supposed, but apparently without any sufficient authority, that this is the Ferula communis of Linnæus. Fée is of opinion that one of the Umbelliferæ is meant.

[53] In B. xix. c. 53.

[54] It is probable, Fée says, that Pliny does not intend here to speak of the *calyx* as understood by modern botanists, but the *corolla* of the plant. The calyx disappears immediately after the plant has blossomed; and is never employed by medical men at the present day, who confine themselves to the heads or capsules.

[55] The variety Album of the Papaver somniferum. See B. xix. c. 53.

[56] The variety A. nigrum of the Papaver somniferum of Decandolle.

[57] The incisions are made in the capsules, and towards the upper part of the peduncle. The account given by Pliny, Fée remarks, differs but little from that by Kæmpfer, in the early part of last century.

[58] Nine in the morning.

and calyx of the plant; this being the only kind, in fact, into the head of which the incision is made. This juice, like that of any other plant, is received in wool;[59] or else, if it is in very minute quantities, it is scraped off with the thumb nail just as it is from the lettuce, and so again on the following day, with the portion that has since dried there. If obtained from the poppy in sufficiently large quantities, this juice thickens, after which it is kneaded out into lozenges, and dried in the shade. This juice is possessed not only of certain soporific qualities, but, if taken in too large quantities, is productive of sleep unto death even: the name given to it is "opium."[60] It was in this way, we learn, that the father of P. Licinius Cæcina, a man of Prætorian rank, put an end to his life at Bavilum[61] in Spain, an incurable malady having rendered existence quite intolerable to him. Many other persons, too, have ended their lives in a similar way. It is for this reason that opium has been so strongly exclaimed against by Diagoras and Erasistratus; for they have altogether condemned it as a deadly poison, forbidding it to be used for infusions even, as being injurious to the sight. Andreas says, in addition to this, that the only reason why it does not cause instantaneous blindness, is the fact that they adulterate it at Alexandria. In later times, however, the use of it has not been disapproved of—witness the celebrated preparation known as "diacodion."[62] Lozenges are also made of ground poppy-seed, which are taken in milk as a soporific.[63] The seed is employed, too, with rose-oil for head-ache; and, in combination with that oil, is injected into the ears for ear-ache. Mixed with woman's milk, this seed is used as a liniment for gout: the leaves, too, are employed in a similar manner. Taken in vinegar, the seed is prescribed as a cure for erysipelas and wounds.

For my own part, however, I do not approve of opium

[59] This plan, Fée thinks, would not be attended with advantage.

[60] A name, probably, of Eastern origin, and now universally employed.

[61] "Bilbilis" has been suggested.

[62] Syrop of white poppies was, till recently, known as sirop of diacodium. Opium is now universally regarded as one of the most important ingredients of the Materia Medica.

[63] Poppy-seed, in reality, is not possessed of any soporific qualities whatever. This discovery, however, was only made in the latter part of the last century, by the French chemist, Rosier.

entering into the composition of eye-salves,[64] and still less of the preparations from it known as febrifuges,[65] digestives, and cœliacs: the black poppy, however, is very generally prescribed, in wine, for cœliac affections. All the cultivated[66] poppies are larger than the others, and the form of the head is round. In the wild poppy the head is elongated and small, but it is possessed of more active[67] properties than the others in every respect. This head is often boiled, and the decoction of it taken to promote sleep, the face being fomented also with the water. The best poppies are grown in dry localities, and where it seldom rains.

When the heads and leaves of the poppy are boiled together, the name given to the decoction is "meconium;"[68] it is much less powerful, however, in its effects than opium.

The principal test[69] of the purity of opium is the smell, which, when genuine, is so penetrating as to be quite insupportable. The next best test is that obtained by lighting it at a lamp; upon which it ought to burn with a clear, brilliant flame, and to give out a strong odour when extinguished; a thing that never happens when opium has been drugged, for, in such case, it lights with the greatest difficulty, and the flame repeatedly goes out. There is another way of testing its genuineness, by water; for, if it is pure, it will float like a thin cloud upon the surface, but, if adulterated, it will unite in the form of blisters on the water. But the most surprising thing of all is the fact, that the sun's heat in summer furnishes a test; for, if the drug is pure, it will sweat and gradually melt, till it has all the appearance of the juice when fresh gathered.

Mnesides is of opinion that the best way of preserving opium is to mix henbane seed with it; others, again, recommend that it should be kept with beans.

[64] "Collyriis."

[65] "Lexipyretos," "pepticas," and "cœliacas"—Greek appellations.

[66] The type of the cultivated poppy is the Papaver somniferum of Linnæus.

[67] This, Fée says, is a matter of doubt.

[68] From *μήκων*, a "poppy." Tournefort has described this kind of opium obtained by decoction; it is held in little esteem.

[69] Fée remarks, that this account of the tests of opium is correct in the extreme.

CHAP. 77. (19.)—THE POPPY CALLED RHŒAS: TWO REMEDIES.

The poppy which we have[70] spoken of under the names of "rhœas" and the "erratic" poppy, forms an intermediate variety between the cultivated and the wild poppy; for it grows in the fields, it is true, but it is self-set nevertheless. Some persons eat[71] it, calyx and all, immediately after it is gathered. This plant is an extremely powerful purgative: five heads of it, boiled in three semi-sextarii of wine, and taken in drink, have the effect of producing sleep.

CHAP. 78.—THE WILD POPPY CALLED CERATITIS, GLAUCIUM, OR PARALIUM: SIX REMEDIES.

There is one variety of wild poppy known as "ceratitis."[72] It is of a black colour, a cubit in height, and has a thick root covered with bark, with a head resembling a small bud, bent and pointed at the end like a horn. The leaves of this plant are smaller and thinner than those of the other wild poppies, and the seed, which is very diminutive, is ripe at harvest. Taken with honied wine, in doses of half an acetabulum, the seed acts as a purgative. The leaves, beaten up in oil, are a cure for the white[73] specks which form on the eyes of beasts of burden. The root, boiled down to one half, in doses of one acetabulum to two sextarii of water, is prescribed for maladies of the loins and liver, and the leaves, employed with honey, are a cure for carbuncles.

Some persons give this kind of poppy the name of "glaucion," and others of "paralium,"[74] for it grows, in fact, in spots exposed to exhalations from the sea, or else in soils of a nitrous nature.

CHAP. 79.—THE WILD POPPY CALLED HERACLIUM, OR APHRON: FOUR REMEDIES. DIACODION.

There is another kind[75] of wild poppy, known as "heraclion"

[70] In B. xix. c. 53. The Papaver rhœas of Linnæus: the field poppy, corn poppy, or corn rose.

[71] Theophrastus says that it has just the taste of wild endive. Fée remarks that the peasants of Treves eat the leaves of this poppy while young.

[72] The Glaucium Corniculatum of Persoon; the horned poppy, or glaucium. This, Fée remarks, is not a poppy in reality, but a species of the genus Chelidonium. The juice is an irritating poison, and the seed is said to act as an emetic.

[73] "Argema."

[74] "By the sea-shore."

[75] Not a poppy, but the Euphorbia esula of Linnæus, a spurge. The

by some persons, and as "aphron" by others. The leaves of it, when seen from a distance, have all the appearance of sparrows;[76] the root lies on the surface of the ground, and the seed has exactly the colour of foam.[77] This plant is used for the purpose of bleaching linen[78] cloths in summer. It is bruised in a mortar for epilepsy, being given in white wine, in doses of one acetabulum, and acting as an emetic.

This plant is extremely useful, also, for the composition of the medicament known as "diacodion,"[79] and "arteriace." This preparation is made with one hundred and twenty heads[80] of this or any other kind of wild poppy, steeped for two days in three sextarii of rain water, after which they are boiled in it. You must then dry the heads; which done, boil them down with honey to one half, at a slow heat. More recently, there have been added to the mixture, six drachmæ of saffron, hypocisthis,[81] frankincense, and gum acacia, with one sextarius of raisin wine of Crete. All this, however, is only so much ostentation; for the virtue of this simple and ancient preparation depends solely upon the poppy and the honey.

CHAP. 80.—THE POPPY CALLED TITHYMALON, OR PARALION: THREE REMEDIES.

There is a third kind, again, called "tithymalon;"[82] some

milky juice found in the stalk and leaves have caused it to be classed among the poppies, as other varieties of Euphorbiaceæ appear to have been, among the wild lettuces.

[76] Theophrastus, Hist. Plant. B. ix. c. 31, compares this plant with the Struthium—(see B. xix. c. 18). Pliny, or his scribes, have supposed him to be speaking of the στρούθος, or "sparrow"—hence the present mistake. The Struthium itself has received that name from the resemblance which its flower bears to a bird with the wings expanded.

[77] Hence its name, "aphron."

[78] See B. xix. c. 4. Pliny has here mistaken a passage of Theophrastus, Hist. Plant. B. ix. c. 31; where he attributes this quality to the Struthium, and not the Heraclium.

[79] See c. 76 of this Book. It is difficult to conjecture how one of the Euphorbiaceæ, a powerful drastic, could enter into the composition of a soothing preparation, such as the diacodion is said to have been.

[80] "Capitibus." As Fée remarks, the capsules of Euphorbia bear no resemblance whatever to the heads of the poppy. Dioscorides, B. iv. c. 67, similarly confounds these two plants.

[81] See B. xxvi. c. 31.

[82] See B. xxvi. c. 41. Probably the Euphorbia paralias of Linnæus, or Sea euphorbia. Its medicinal properties are similar to those of the Euphorbia esula above mentioned.

persons give it the name of "mecon," others of "paralion." It has a white leaf, resembling that of flax, and a head the size of a bean. It is gathered when the vine is in blossom, and dried in the shade. The seed, taken in drink, purges the bowels, the dose being half an acetabulum, in honied wine. The head of every species of poppy, whether green or dry, used as a fomentation, assuages defluxions[83] of the eyes. Opium, if taken in pure wine immediately after the sting of a scorpion, prevents any dangerous results. Some persons, however, attribute this virtue to the black poppy only, the head or leaves being beaten up for the purpose.

CHAP. 81. (20.)—PORCILLACA OR PURSLAIN, OTHERWISE CALLED PEPLIS: TWENTY-FIVE REMEDIES.

There is a wild purslain,[84] too, called "peplis," not much superior in its virtues to the cultivated[85] kind, of which such remarkable properties are mentioned. It neutralizes the effects, it is said, of poisoned arrows, and the venom of the serpents known as hæmorrhois and prester;[86] taken with the food and applied to the wound, it extracts the poison. The juice, too, they say, taken in raisin wine, is an antidote for henbane. When the plant itself cannot be procured, the seed of it is found to be equally efficacious. It is a corrective, also, of impurities in water; and beaten up in wine and applied topically, it is a cure for head-ache and ulcers of the head. Chewed in combination with honey, it is curative of other kinds of sores. It is similarly applied to the region of the brain in infants, and in cases of umbilical hernia; as also for defluxions of the eyes, in persons of all ages, being applied to the forehead and temples with polenta. If employed as a liniment for the eyes, milk and honey are added, and when used for proptosis[87] of

[83] The fructiferous heads of the Euphorbiaceæ, thus employed, would, as Fée remarks, be productive of most disastrous results.

[84] The Euphorbia peplis of Linnæus.

[85] See B. xiii. c. 40. By Dioscorides, B. iv. c. 165, all these virtues are attributed exclusively to the cultivated purslain. Indeed, there is no analogy between the properties of the two plants; though neither of them is possessed of the wonderful virtues as antidotes here mentioned, and they would only increase the sufferings of asthmatic patients.

[86] As to this serpent, see Lucan's Pharsalia, B. ix. l. 722, *et seq.*

[87] A kind of spreading tumour, which, according to Scribonius Largus, would appear as if about to force the eye out of the socket. Fée remarks, that this malady is no longer known.

the eyes, the leaves are beaten up with bean-shells. In combination with polenta, salt, and vinegar, it is employed as a fomentation for blisters.

Chewed raw, purslain reduces ulcerations of the mouth and gum-boils, and cures tooth-ache; a decoction of it is good, too, for ulcers of the tonsils. Some persons have added a little myrrh to it, when so employed. Chewed, it strengthens such teeth as may happen to be loose, dispels crudities, imparts additional strength to the voice, and allays thirst. Used with nut-galls, linseed, and honey, in equal proportions, it assuages pains in the neck; and, combined with honey or Cimolian chalk, it is good for diseases of the mamillæ. The seed of it, taken with honey, is beneficial for asthma. Eaten in salads,[89] this plant is very strengthening to the stomach. In burning fevers, applications of it are made with polenta; in addition to which, if chewed, it will cool and refresh the intestines. It arrests vomiting, also, and for dysentery and abscesses, it is eaten with vinegar, or else taken with cummin in drink: boiled, it is good for tenesmus. Taken either in the food or drink, it is good for epilepsy; and, taken in doses of one acetabulum in boiled wine,[90] it promotes the menstrual discharge. Employed, also, as a liniment with salt, it is used as a remedy for fits of hot gout and erysipelas.

The juice of this plant, taken in drink, strengthens the kidneys and bladder, and expels intestinal worms. In conjunction with oil, it is applied, with polenta, to assuage the pain of wounds, and it softens indurations of the sinews. Metrodorus, who wrote an Abridgment of Botany,[91] says that it should be given after delivery, to accelerate the lochial discharge. It is also an antaphrodisiac, and prevents the recurrence of lascivious dreams. One of the principal personages of Spain, whose son has been Prætor, is in the habit of carrying the root of it, to my knowledge, suspended by a string from his neck, except when he is taking the bath, for an incurable affection of the uvula; a precaution by which he has been spared all inconvenience.

I have found it stated, too, in some authors, that if the head is rubbed with a liniment of this plant, there will be no de-

[88] See B. xxxv. c. 57.

[89] "Acetariis."

[90] "Sapa." Grape-juice, boiled down to one third.

[91] Ἐπιτομὴν ῥιζοτομένων.

fluxions perceptible the whole year through. It is generally thought, however, that purslain weakens the sight.

CHAP. 82.—CORIANDER: TWENTY-ONE REMEDIES.

There is no wild coriander [92] to be found; the best, it is generally agreed, is that of Egypt. Taken in drink and applied to the wound, it is a remedy for the sting [93] of one kind of serpent, known as the amphisbæna: [94] pounded, it is healing also for other wounds, as well as for epinyctis and blisters. Employed in the same state with honey or raisins, it disperses all tumours and gatherings, and, beaten up in vinegar, it removes abscesses of an inflammatory nature. Some persons recommend three grains of it to be taken for tertian fevers, just before the fit comes on, or else in larger quantities, to be bruised and applied to the forehead. There are others, again, who think that it is attended with excellent results, to put coriander under the pillow before sunrise.

While green, it is possessed of very cooling and refreshing properties. Combined with honey or raisins, it is an excellent remedy for spreading ulcers, as also for diseases of the testes, burns, carbuncles, and maladies of the ears. Applied with woman's milk, it is good for defluxions of the eyes; and for fluxes of the belly and intestines, the seed is taken with water in drink; it is also taken in drink for cholera, with rue. Coriander seed, used as a potion with pomegranate juice and oil, expels worms in the intestines.

Xenocrates states a very marvellous fact, if true; he says, that if a woman takes one grain of this seed, the menstrual discharge will be retarded one day, if two grains, two days, and so on, according to the number of grains taken. Marcus Varro is of opinion, that if coriander is lightly pounded, and sprinkled over it with cummin and vinegar, all kinds of meat may be kept in summer without spoiling.

CHAP. 83.—ORAGE: FOURTEEN REMEDIES.

Orage,[95] again, is found both wild and cultivated. Pytha-

[92] The Coriandrum sativum of Linnæus. At the present day, wild coriander is commonly found in Italy, on uncultivated soils. It may have been naturalized, however, Fée thinks, since the time of Pliny.

[93] Nicander says also, that it is a cure for the stings of serpents and scorpions, but there is no truth in the assertion. [94] See B. viii. c. 35.

[95] The Atriplex hortensis of Linnæus. Fée thinks that the wild atri-

goras has accused this plant of producing dropsy, jaundice, and paleness of the complexion, and he says that it is extremely difficult of digestion. He asserts, also, to its disparagement, that every thing that grows near it in the garden is sure to be drooping and languid. Diocles and Dionysius have added a statement, that it gives birth to numerous diseases, and that it should never be boiled without changing the water repeatedly; they say, too, that it is prejudicial to the stomach, and that it is productive of freckles and pimples on the skin.

I am at a loss to imagine why Solo of Smyrna has stated that this plant is cultivated in Italy with the greatest difficulty. Hippocrates[96] prescribes it with beet, as a pessary for affections of the uterus; and Lycus of Neapolis recommends it to be taken in drink, in cases of poisoning by cantharides. He is of opinion, also, that either raw or boiled, it may be advantageously employed as a liniment for inflammatory swellings, incipient boils, and all kinds of indurations; and that, mixed with oxymel and nitre, it is good for erysipelas and gout. This plant, it is said, will bring away mal-formed nails, without producing sores. There are some persons who give orage-seed with honey for jaundice, and rub the throat and tonsils with it, nitre being added as well. They employ it, also, to purge the bowels, and use the seed, boiled, as an emetic,[97] either taken by itself, or in conjunction with mallows or lentils.

Wild orage is used for dyeing the hair, as well as the other purposes above enumerated.

CHAP. 84. (21.)—THE MALLOW CALLED MALOPE: THIRTEEN REMEDIES. THE MALLOW CALLED MALACHE: ONE REMEDY. THE MALLOW CALLED ALTHÆA, OR PLISTOLOCHIA: FIFTY-NINE REMEDIES.

Both kinds of mallows,[98] on the other hand, the cultivated and the wild, are held in very general esteem. These kinds are subdivided, each of them, into two varieties, according to

plex of Pliny is some kind of Chenopodium, which it is now impossible to identify. Orage is more of an aliment than a medicament. Applied externally, it is soothing and emollient.

[96] De Morb. Mulier. B. ii. c. 57.

[97] It would not have this effect. The statements here given relative to the virtues of orage are, in general, considered to be correct.

[98] See B. xix. c. 22.

the size of the leaf. The cultivated mallow with large leaves is known to the Greeks by the name of "malope,"[99] the other being called "malache,"[1]—from the circumstance, it is generally thought, that it relaxes[2] the bowels. The wild[3] mallow, again, with large leaves and white roots, is called "althæa," and by some persons, on account of its salutary properties, "plistolochia."[4] Every soil in which mallows are sown, is rendered all the richer thereby. This plant is possessed of remarkable virtues,[5] as a cure for all kinds of stings,[6] those of scorpions, wasps, and similar insects, as well as the bite of the shrew-mouse, more particularly; nay, what is even more than this, if a person has been rubbed with oil in which any one of the mallows has been beaten up, or even if he carries them on his person, he will never be stung. A leaf of mallow put upon a scorpion, will strike it with torpor.

The mallow is an antidote, also, against the poisonous effects of white[7] lead; and applied raw with saltpetre, it extracts all kinds of pointed bodies from the flesh. A decoction of it with the root, taken in drink, neutralizes the poison of the sea-hare,[8] provided, as some say, it is brought off the stomach by vomiting.

Other marvels are also related in connection with the mallow, but the most surprising thing of all is, that if a person takes half a cyathus of the juice of any one of them daily, he will be

[99] The Malva silvestris of Linnæus, or wild mallow.

[1] The Malva rotundifolia of Linnæus, or round-leaved mallow.

[2] From μαλάσσω, to "soften," or "relax."

[3] These wild varieties are the same in every respect as the cultivated kinds; their essential characteristics not being changed by cultivation. See further as to the Althæa or marsh mallow, at the latter end of this Chapter.

[4] The meaning of this name appears to be unknown. "Pistolochia" is a not uncommon reading.

[5] Mallows were commonly used as a vegetable by the ancients; and are so in China and the south of France, at the present day. The mucilaginous principle which they contain renders them emollient and pectoral; they are also slightly laxative.

[6] The only benefit resulting from the application of mallows would be the reduction of the inflammation; the plant having no efficacy whatever in neutralizing the venom.

[7] Sub-carbonate of lead. The mallow would have little or no effect in such a case.

[8] See B. ix. c. 72, and B. xxxii. c. 3.

exempt from all diseases.[9] Left to putrefy in wine, mallows are remedial for running sores of the head, and, mixed with honey, for lichens and ulcerations of the mouth; a decoction of the root, too, is a remedy for dandriff[10] of the head and looseness of the teeth. With the root of the mallow which has a single stem,[11] it is a good plan to prick the parts about a tooth when it aches, until the pain has ceased. With the addition of human saliva, the mallow cleanses scrofulous sores, imposthumes of the parotid glands, and inflammatory tumours, without producing a wound. The seed of it, taken in red wine, disperses phlegm and relieves nausea; and the root, attached to the person with black wool, is a remedy for affections of the mamillæ. Boiled in milk, and taken as a pottage, it cures a cough within five days.

Sextius Niger says that mallows are prejudicial to the stomach, and Olympias, the Theban authoress, asserts that, employed with goose-grease, they are productive of abortion. Some persons are of opinion, that a good handful of the leaves, taken in oil and wine, promotes the menstrual discharge. At all events, it is a well-known fact, that if the leaves are strewed beneath a woman in labour, the delivery will be accelerated; but they must be taken away immediately after the birth, or prolapsus of the uterus will be the consequence. Mallow-juice, also, is given to women in labour, a decoction of it being taken fasting in wine, in doses of one hemina.

Mallow seed is attached to the arms of patients suffering from spermatorrhœa; and, so naturally adapted is this plant for the promotion of lustfulness, that the seed of the kind with a single stem, sprinkled upon the genitals, will increase the sexual desire in males to an infinite degree, according to Xenocrates; who says, too, that if three roots are attached to the person, in the vicinity of those parts, they will be productive of a similar result. The same writer informs us also, that injections of mallows are good for tenesmus and dysentery, and for maladies of the rectum even, if used as a fomentation only. The juice is given warm to patients afflicted with melan-

[9] The same was said in the middle ages, of the virtues of sage, and in more recent times of the Panax quinquefolium, the Ginseng of the Chinese.

[10] Q. Serenus Sammonicus speaks of the accumulation of dandriff in the hair to such a degree as to form a noxious malady. He also mentions the present remedy for it.

[11] Some commentators have supposed this to be the Alcea rosa of Linnæus; but Fée considers this opinion to be quite unfounded.

choly, in doses of three cyathi, and to insane persons[12] in doses of four. One hemina of the decoction is prescribed, also, for epilepsy.[13] A warm decoction of the juice is employed, too, as a fomentation for calculus, flatulency, gripings of the stomach, and opisthotony. The leaves are boiled, and applied with oil, as a poultice for erysipelas and burns, and raw, with bread, to arrest inflammation in wounds. A decoction of mallows is beneficial for affections of the sinews and bladder, and for gnawing pains of the intestines; taken, too, as an aliment, or an injection, they are relaxing to the uterus, and the decoction, taken with oil, facilitates the passage of the urine.[14]

The root of the althæa[15] is even more efficacious for all the purposes above enumerated, and for convulsions and ruptures more particularly. Boiled in water, it arrests looseness of the bowels; and taken in white wine, it is a cure for scrofulous sores, imposthumes of the parotid glands, and inflammations of the mamillæ. A decoction of the leaves in wine, applied as a liniment, disperses inflammatory tumours; and the leaves, first dried, and then boiled in milk, are a speedy cure for a cough, however inveterate. Hippocrates prescribes a decoction of the root to be drunk by persons wounded or thirsty from loss of blood, and the plant itself as an application to wounds, with honey and resin. He also recommends it to be employed in a similar manner for contusions, sprains, and tumours of the muscles, sinews, and joints, and prescribes it to be taken in wine for asthma and dysentery. It is a singular thing, that water in which this root has been put, thickens when exposed in the open air, and congeals[16] like ice. The more recently, however, it has been taken up, the greater are the virtues of the root.[17]

[12] It would be of no use whatever in such cases, Fée says.

[13] Without any good results, Fée says.

[14] "Permeatus suaves facit." We can only make a vague guess at the meaning; as the passage is, most probably, corrupt.

[15] The Althæa officinalis of Linnæus, or marsh-mallow. The medicinal properties are similar to those of the other varieties of the mallow.

[16] It is the fact, that water, in which mallows are steeped, owing to the mucilage of the root, assumes the appearance of milk.

[17] Fée says that this milky appearance of the water does not depend on the freshness of the root; as it is only the aqueous particles that are dried up, the mucilage preserving its chemical properties in their original integrity.

CHAP. 85.—WILD LAPATHUM OR OXALIS, OTHERWISE CALLED LAPATHUM CANTHERINUM, OR RUMEX: ONE REMEDY. HYDROLAPATHUM: TWO REMEDIES. HIPPOLAPATHUM: SIX REMEDIES. OXYLAPATHUM: FOUR REMEDIES.

Lapathum, too, has pretty nearly the same properties. There is a wild[18] variety, known to some as "oxalis," very similar in taste to the cultivated kind, with pointed leaves, a colour like that of white beet, and an extremely diminutive root: our people call it "rumex,"[19] while others, again, give it the name of "lapathum cantherinum." [20]Mixed with axle-grease, this plant is very efficacious for scrofulous sores. There is another kind, again, hardly forming a distinct variety, known as "oxylapathon,"[21] which resembles the cultivated kind even more than the last, though the leaves are more pointed and redder: it grows only in marshy spots. Some authors are found who speak of a "hydrolapathon,"[22] which grows in the water, they say. There is also another variety, known as "hippolapathon,"[23] larger than the cultivated kind, whiter, and more compact.

The wild varieties of the lapathum are a cure[24] for the stings of scorpions, and protect those who carry the plant on their person from being stung. A decoction of the root in vinegar, employed as a gargle, is beneficial to the[25] teeth, and if drunk, is a cure for jaundice. The seed is curative of the most obstinate maladies of the stomach.[26] The root of hippolapathum, in particular, has the property of bringing off malformed nails; and the seed, taken in wine, in doses of two drachmæ, is a cure for dysentery. The seed of oxylapathum,

[18] The Rumex acetosella of Linnæus, or small sorrel.

[19] See B. xix. c. 60.

[20] "Horse Lapathum."

[21] Or "Lapathum with pointed leaves;" the Rumex acutus of Linnæus.

[22] Or "water lapathum;" the Rumex aquaticus of Linnæus.

[23] Or "horse lapathum;" the Rumex patientia of Linnæus: or dock, as Fée thinks: though, according to Sprengel, the cultivated lapathum was identical with that plant.

[24] The medicinal properties of the lapathum vary according to the parts of the plant employed. The leaves and stalks of the acid kinds of Rumex are refreshing, and slightly diuretic and laxative. The action of those which are not acid is sudorific, antiherpetic, and depurative.

[25] Fée says that it would be of no benefit whatever for tooth-ache.

[26] It is not possessed of any stomachic properties, Fée remarks.

washed in rain-water, with the addition of a piece of gum acacia, about the size of a lentil, is good for patients troubled with spitting of blood.[27] Most excellent lozenges are made of the leaves and root of this plant, with the addition of nitre and a little incense. When wanted for use, they are first steeped in vinegar.

CHAP. 86. — CULTIVATED LAPATHUM: TWENTY-ONE REMEDIES. BULAPATHUM: ONE REMEDY.

As to garden lapathum,[28] it is good in liniments on the forehead for defluxions of the eyes. The root of it cures lichens and leprous sores, and a decoction of it in wine is remedial for scrofulous swellings, imposthumes of the parotid glands, and calculus of the bladder. Taken in wine it is a cure for affections of the spleen, and employed as a fomentation, it is equally good for cœliac affections, dysentery, and tenesmus. For all these purposes, the juice of lapathum is found to be even still more efficacious. It acts as a carminative and diuretic, and dispels films on the eyes: put into the bath, or else rubbed upon the body, without oil, before taking the bath, it effectually removes all itching sensations. The root of it, chewed, strengthens the teeth, and a decoction of it in wine arrests[29] looseness of the stomach: the leaves, on the other hand, relax it.

Not to omit any particulars, Solo has added to the above varieties a bulapathon,[30] which differs only from the others in the length of the root. This root, taken in wine, is very beneficial for dysentery.

CHAP. 87. (22.)—MUSTARD, THE THREE KINDS OF IT: FORTY-FOUR REMEDIES.

Mustard, of which we have mentioned[31] three different

[27] It would be of no utility in such a case, Fée says.

[28] Supposed by Fée to be the same as the wild lapathum of the last Chapter, the Rumex acetosella of Linnæus; small sorrel.

[29] Fée remarks that no part of lapathum is naturally astringent.

[30] Or "ox lapathum." Fée considers this to be identical with the "hippolapathon" of the last Chapter.

[31] In B. xix. c. 54. Fée identifies these three varieties of mustard as follows; the slender-stemmed mustard of Pliny he identifies with the Sinapis alba of Linnæus, mustard with white seeds. The mustard mentioned as having the leaves of rape he considers to be the same as the Sinapis

kinds, when speaking of the garden herbs, is ranked by Pythagoras among the very first of those plants the pungency of which mounts upwards; for there is none to be found more penetrating to the brain and nostrils.

Pounded with vinegar, mustard is employed as a liniment for the stings of serpents and scorpions, and it effectually neutralizes the poisonous properties of fungi. To cure an immoderate secretion of phlegm it is kept in the mouth till it melts, or else it is mixed with hydromel, and employed as a gargle. Mustard is chewed for tooth-ache, and is taken as a gargle with oxymel for affections of the uvula; it is very beneficial, also, for all maladies of the stomach. Taken with the food, it facilitates expectoration[32] from the lungs: it is given, too, for asthma and epileptic fits, in combination with cucumber seed. It has the effect of quickening the senses, and effectually clears the head by sneezing, relaxes the stomach, and promotes the menstrual discharge and the urinary secretions: beaten up with figs and cummin, in the proportion of one-third of each ingredient, it is used as an external application for dropsy.

Mixed with vinegar, mustard resuscitates by its powerful odour persons who have swooned in fits of epilepsy or lethargy, as well as females suffering from hysterical suffocations. For the cure of lethargy tordylon is added—that being the name given to the seed of hartwort[33]—and if the lethargic sleep should happen to be very profound, an application of it, with figs and vinegar, is made to the legs, or to the head[34] even. Used as an external application, mustard is a cure for inveterate pains of the chest, loins, hips, shoulders, and, in general, for all deep-seated pains in any part of the body, raising blisters[35] by its caustic properties. In cases of extreme indurations of the skin, the mustard is applied to the part without figs; and a cloth is employed doubled, where it is apprehended that it may burn too powerfully. It is used

nigra of Linnæus, mustard with black seed; and that with the leaf of the rocket he identifies with the Sinapis erucoïdes of Linnæus, the Eruca silvestris of Gessner, or rocket-leaved mustard.

[32] In reality, mustard is injurious for all affections of the chest and throat.

[33] "Seseli."

[34] A sinapism applied to the head, Fée remarks, in cases of cerebral congestion, would very soon cause death.

[35] Mustard poultices are used extensively at the present day for blisters on the chest.

also, combined with red-earth,[36] for alopecy, itch-scabs, leprosy, phthiriasis, tetanus, and opisthotony. They employ it also as a liniment with honey for styes[37] on the eyelids and films on the eyes.

The juices of mustard are extracted in three different ways, in earthen vessels in which it is left to dry gradually in the sun. From the thin stem of the plant there exudes also a milky juice,[38] which when thus hardened is remedial for tooth-ache. The seed and root, after they have been left to steep in must, are beaten up together in a mortar; and a good handful of the mixture is taken to strengthen[39] the throat, stomach, eyes, head, and all the senses. This mixture is extremely good, too, for fits of lassitude in females, being one of the most wholesome medicines in existence. Taken in vinegar, mustard disperses calculi in the bladder; and, in combination with honey and goose-grease, or else Cyprian wax, it is employed as a liniment for livid spots and bruises. From the seed, first steeped in olive-oil, and then subjected to pressure, an oil is extracted, which is employed for rigidity of the sinews, and chills and numbness in the loins and hips.

CHAP. 88.—ADARCA: FORTY-EIGHT REMEDIES.

It is said that adarca, of which we have already made mention[40] when speaking of the forest-trees, has a similar nature[41] to that of mustard, and is productive of the same effects: it grows upon the outer coat of reeds, below the head.

CHAP. 89.—MARRUBIUM OR PRASION, OTHERWISE LINOSTROPHON, PHILOPAIS, OR PHILOCHARES: TWENTY-NINE REMEDIES.

Most medical writers have spoken in high terms of marru-

[36] "Rubrica." [37] "Scabras genas."

[38] This is not the fact; no juice flows from the stem which is capable of becoming concrete.

[39] As a tonic, mustard-seed is commonly taken whole at the present day.

[40] In B. xvi. c. 66. In B. xxxii. c. 52, we shall find Pliny speaking of this substance under the name of "Calamochnus." Dioscorides, B. v. c. 137, speaks of adarca as growing in Cappadocia, and as being a salt substance which adheres to reeds in time of drought.

[41] This, Fée says, cannot possibly be the fact, whatever adarca may really have been.

bium, or horehound, as a plant of the very greatest utility. Among the Greeks, it is called "prasion"[42] by some, by others "linostrophon,"[43] and by others, again, "philopais"[44] or "philochares:"[45] it is a plant too well known to require any description.[46] The leaves[47] and seed beaten up, together, are good for the stings of serpents, pains of the chest and side, and inveterate coughs. The branches, too, boiled in water with panic,[48] so as to modify its acridity, are remarkably useful for persons troubled with spitting[49] of blood. Horehound is applied also, with grease, to scrofulous swellings. Some persons recommend for a cough, a pinch of the fresh seed with two fingers, boiled with a handful of spelt[50] and a little oil and salt, the mixture to be taken fasting. Others, again, regard as quite incomparable for a similar purpose an extract of the juices of horehound and fennel. Taking three sextarii of the extract, they boil it down to two, and then add one sextarius of honey; after which they again boil it down to two, and administer one spoonful of the preparation daily, in one cyathus of water.

Beaten up with honey, horehound is particularly beneficial for affections of the male organs; employed with vinegar, it cleanses lichens, and is very salutary for ruptures, convulsions, spasms, and contractions of the sinews. Taken in drink with salt and vinegar, it relaxes the bowels, promotes the menstrual discharge, and accelerates the after-birth. Dried, powdered, and taken with honey, it is extremely efficacious

[42] The "grass-green" plant.
[43] The "twisted flax" plant.
[44] "Lad's-love."
[45] "Love and grace," apparently.

[46] There are two kinds of prasion mentioned by Dioscorides, and by Pliny at the end of the present Chapter, one of which Fée is inclined to identify with the Ballota nigra of Linnæus, the fetid ballota; and the other with the Marrubium vulgare of Linnæus, the white horehound. Bochart conjectures that the word "marrubium" had a Punic origin, but Linnæus thinks that it comes from "Maria urbs," the "City of the Marshes," situate on Lake Fucinus, in Italy.

[47] Though much used in ancient times, horehound is but little employed in medicine at the present day: though its medicinal value, Fée thinks, is very considerable. Candied horehound is employed to some extent in this country, as a pectoral.

[48] See B. xviii. c. 25.

[49] Its medicinal properties, as recognized in modern times, are in most respects dissimilar to those mentioned by Pliny.

[50] "Far."

for a dry cough, as also for gangrenes and hang-nails.[51] The juice, too, taken with honey, is good for the ears and nostrils: it is a remedy also for jaundice, and diminishes the bilious secretions. Among the few antidotes[52] for poisons, it is one of the very best known.

The plant itself, taken with iris and honey, purges the stomach and promotes expectorations: it acts, also, as a strong diuretic, though, at the same time, care must be taken not to use it when the bladder is ulcerated and the kidneys are affected. It is said, too, that the juice of horehound improves the eyesight. Castor speaks of two varieties of it, the black horehound and the white, which last he considers to be the best. He puts the juice of it into an empty eggshell, and then mixes the egg with it, together with honey, in equal proportions: this preparation used warm, he says, will bring abscesses to a head, and cleanse and heal them. Beaten up, too, with stale axle-grease and applied topically, he says, horehound is a cure for the bite of a dog.

CHAP. 90.—WILD THYME: EIGHTEEN REMEDIES.

Wild thyme, it is said, borrows its name, "serpyllum," from the fact that it is a creeping[53] plant, a property peculiar to the wild kind, that which grows in rocky places more particularly. The cultivated[54] thyme is not a creeping plant, but grows upwards, as much a palm in height. That which springs up spontaneously, grows the most luxuriantly, its leaves and branches being whiter than those of the other kinds. Thyme is efficacious as a remedy for the stings of serpents, the cenchris[55] more particularly; also for the sting of the scolopendra, both sea and land, the leaves and branches being boiled for the purpose in wine. Burnt, it puts to flight all venomous crea-

[51] "Pterygia." "Pterygium" is also a peculiar disease of the eye.

[52] "Inter pauca." He has mentioned, however, a *vast number* of so-called antidotes or remedies. It is just possible that he may mean, "There are few antidotes like it for efficacy."

[53] "A serpendo:" the Thymus serpyllum of Linnæus.

[54] The Thymus zygis of Linnæus: the Serpyllum folio thymi of C. Bauhin. Dioscorides says that it is the *cultivated* thyme that is a creeping plant.

[55] See Lucan's Pharsalia, B. ix. l. 712, *et seq.*

tures by its smell, and it is particularly beneficial as an antidote to the venom of marine animals.

A decoction of it in vinegar is applied for head-ache, with rose oil, to the temples and forehead, as also for phrenitis and lethargy: it is given, too, in doses of four drachmæ, for gripings of the stomach, strangury, quinsy, and fits of vomiting. It is taken in water, also, for liver complaints. The leaves are given in doses of four oboli, in vinegar, for diseases of the spleen. Beaten up in two cyathi of oxymel, it is used for spitting of blood.

CHAP. 91.—SISYMBRIUM OR THYMBRÆUM: TWENTY-THREE REMEDIES.

Wild[55*] sisymbrium, by some persons called "thymbræum," does not grow beyond a foot in height. The kind[56] which grows in watery places, is similar to nasturtium, and they[57] are both of them efficacious for the stings of certain insects, such as hornets and the like. That which grows in dry localities is odoriferous, and is employed[58] for wreaths: the leaf of it is narrower than in the other kind. They both of them alleviate head-ache, and defluxions of the eyes, Philinus says. Some persons, however, employ bread in addition; while others, again, use a decoction of the plant by itself in wine. It is a cure, also, for epinyctis, and removes spots on the face in females, by the end of four days; for which purpose, it is applied at night and taken off in the day-time. It arrests vomiting, hiccup, gripings, and fluxes of the stomach, whether taken with the food, or the juice extracted and given in drink.

This plant, however, should never be eaten by pregnant women, except in cases where the fœtus is dead, for the very application of it is sufficient to produce abortion. Taken with wine, it is diuretic, and the wild variety expels calculi even. For persons necessitated to sit up awake, an infusion of it in vinegar is applied as a liniment to the head.

55* The Sisymbrion menta of Gerard; the Menta hirsuta of Decandolle, prickly mint. Sprengel, however, takes it to be the Menta silvestris of modern Botany.

56 The Sisymbrion nasturtium of Linnæus.

57 Apparently the Sisymbrium just mentioned, and the Nasturtium.

58 Ovid, Fasti, B. iv. l. 869, speaks of Sisymbrium as being esteemed by the Roman ladies for its agreeable smell.

CHAP. 92.—LINSEED: THIRTY REMEDIES.

Linseed[59] is not only used in combination with other substances, but, employed by itself, it disperses spots on the face in women: its juice, too, is very beneficial to the sight. Combined with incense and water, or else with myrrh and wine, it is a cure for defluxions of the eyes, and employed with honey, grease, or wax, for imposthumes of the parotid glands. Prepared[60] like polenta, it is good for fluxes of the stomach; and a decoction of it in water and oil, applied topically with anise, is prescribed for quinsy. It is sometimes used parched, also, to arrest looseness of the bowels, and applications of it are used, with vinegar, for cœliac affections and dysentery. It is eaten with raisins, also, for pains in the liver, and excellent electuaries are made of it for the treatment of phthisis.

Linseed-meal, with the addition of nitre, salt, or ashes, softens rigidities of the muscles, sinews, joints, and vertebræ, as well as of the membranous tissues of the brain. Employed with figs, linseed-meal ripens abscesses and brings them to a head: mixed with the root of wild cucumber, it extracts[61] all foreign bodies from the flesh, as well as splinters of broken bones. A decoction of linseed-meal in wine prevents ulcers from spreading, and mixed with honey, it is remedial for pituitous eruptions. Used with nasturtium, in equal quantities, it rectifies[62] malformed nails; mixed with resin and myrrh, it cures affections of the testes and hernia,[63] and with water, gangrenous sores. A decoction of linseed-meal with fenugreek, in the proportion of one sextarius of each, in hydromel, is recommended for pains in the stomach; and employed as

[59] See B. xix. c. 1. The rich mucilage of linseed makes it extremely valuable, in a medicinal point of view, for poultices. This mucilage is found in the perisperm more particularly; the kernel containing a fixed oil, which is extremely valuable for numerous purposes. The account given by Pliny and the other ancient writers of the medicinal uses of linseed, is, in general, correct.

[60] "Inspersum," sprinkled with boiling water; like oatmeal for porridge, probably.

[61] It would be of no use whatever for such a purpose, Fée says.

[62] "Emendat." By bringing them off probably.

[63] It would be of no utility for hernia, Fée says, or for the cure of gangrenous sores.

an injection, with oil or honey, it is beneficial for dangerous affections of the chest and intestines.

CHAP. 93.—BLITE: SIX REMEDIES.

Blite[64] seems to be a plant of an inert nature, without flavour or any pungency whatever; hence it is that, in Menander, we find husbands giving this name to their wives, by way of[65] reproach. It is[66] prejudicial to the stomach, and disturbs the bowels to such a degree, as to cause cholera in some. It is stated, however, that, taken in wine, it is good for the stings of scorpions; and that it is sometimes used as a liniment for corns on the feet, and, with oil, for affections of the spleen and pains in the temples. Hippocrates is of opinion, that if taken with the food,[67] it will arrest the menstrual discharge.

CHAP. 94. (23.)—MEUM, AND MEUM ATHAMANTICUM: SEVEN REMEDIES.

Meum[68] is never cultivated in Italy except by medical men, and by very few of those. There are two varieties of it, the finer kind being known as "athamanticum," because, according to some, it was first discovered by Athamas; or else because, as others think, that of the best quality is found upon Mount Athamas.[69] The leaf of it is similar to that of dill, and the stem is sometimes as much as two cubits in length: the roots, which run obliquely, are numerous and mostly black, though sometimes white: it is not of so red a hue as the other kind.

The root of this plant, pounded or boiled, and taken in water, is diuretic, and is marvellously efficacious for dispelling flatulency of the stomach. It is good, too, for gripings of the bowels and affections of the bladder: applied with honey to the

[64] The Blitum capitatum of Linnæus.

[65] Hence, too, the Latin word "bliteus," meaning "insipid," "senseless," or "worthless."

[66] This is not the case, it being as innocuous as it is insipid. Applied topically, the leaves are emollient.

[67] There is no foundation, Fée says, for this opinion.

[68] The Æthusa meum of Linnæus; our Spignel, or Baldmoney, the Athamanta Matthioli of Wulf. By some authorities it is called Feniculum Alpinum perenne. It is possessed of exciting properties, and is no longer used in medicine.

[69] See B. iv. c. 8.

region of the uterus, it acts as a diuretic; and used as a liniment with parsley, upon the lower regions of the abdomen in infants, it has a similar effect.

CHAP. 95.—FENNEL: TWENTY-TWO REMEDIES.

Fennel has been rendered famous by the serpent, which tastes it, as already[70] stated, when it casts its old skin, and sharpens its sight with the juice of this plant: a fact which has led to the conclusion that this juice must be beneficial, also, in a high degree to the human sight. Fennel-juice is gathered when the stem is swelling with the bud; after which it is dried in the sun and applied as an ointment with honey. This plant is to be found in all parts of the world. The most esteemed preparation from it, is that made in Iberia, from the tear-like drops which exude[71] from the stalk and the seed fresh-gathered. The juice is extracted, also, from incisions made in the root at the first germination of the plant.

CHAP. 96.—HIPPOMARATHRON, OR MYRSINEUM: FIVE REMEDIES.

There is, also, a wild[72] variety of fennel, known by some persons as "hippomarathron," and by others as "myrsineum;" it has a larger leaf and a more acrid taste than the other kind. It is taller, also, about the thickness of a walking-stick, and has a white root: it grows in warm, but stony localities. Diocles speaks, too, of another[73] variety of hippomarathron, with a long narrow leaf, and a seed like that of coriander.

The seed of the cultivated fennel is medicinally employed in wine, for the stings of scorpions and serpents, and the juice of it, injected into the ears, has the effect of destroying small worms that breed there. Fennel is employed as an ingredient in nearly all our seasonings,[74] vinegar[75] sauces more particularly: it is placed also beneath the undercrust of bread. The

[70] See B. viii. c. 41. This plant is the Anethum feniculum of Linnæus. The seed and roots are still used in medicine, being sudorific, diuretic, and aperitive.

[71] This resinous juice of fennel is no longer employed, or indeed known, Fée says, to the curious.

[72] "Horse marathrum:" the Cachrys Libanotis of Linnæus, probably.

[73] The Seseli tortuosum of Linnæus, probably.

[74] It is sometimes used at the present day for condiments, as a substitute for anise. Pliny's account of its medicinal virtues, Fée says, is replete with errors.

[75] "Oxyporis:" perhaps "salad-dressings."

seed, in fevers even, acts as an astringent upon a relaxed stomach, and beaten up with water, it allays nausea: it is highly esteemed, also, for affections of the lungs and liver. Taken in moderate quantities, it arrests looseness of the bowels, and acts as a diuretic; a decoction of it is good for gripings of the stomach, and taken in drink, it restores the milk. The root, taken in a ptisan,[76] purges the kidneys—an effect which is equally produced by a decoction of the juice or of the seed; the root is good too, boiled in wine, for dropsy and convulsions. The leaves are applied to burning tumours, with vinegar, expel calculi of the bladder, and act as an aphrodisiac.

In whatever way it is taken in drink, fennel has the property of promoting the secretion of the seminal fluids; and it is extremely beneficial to the generative organs, whether a decoction of the root in wine is employed as a fomentation, or whether it is used beaten up in oil. Many persons apply fennel with wax to tumours and bruises, and employ the root, with the juice of the plant, or else with honey, for the bites of dogs, and with wine for the stings of multipedes.

Hippomarathron is more efficacious, in every respect, than cultivated fennel;[77] it expels calculi more particularly, and, taken with weak wine, is good for the bladder and irregularities of the menstrual discharge.

In this plant, the seed is more efficacious than the root; the dose of either of them being a pinch with two fingers, beaten up, and mixed with the usual drink. Petrichus, who wrote a work "On Serpents,"[78] and Micton, who wrote a treatise "On[79] Botany," are of opinion that there is nothing in existence of greater efficacy against serpents than hippomarathron: indeed, Nicander[80] has ranked it by no means among the lowest of antidotes.

CHAP. 97.—HEMP: NINE REMEDIES.

Hemp originally grew in the forests,[81] where it is found with a blacker and rougher leaf than in the other[82] kinds.

[76] See B. xviii. c. 13.

[77] Their properties, Fée says, are very similar.

[78] "Ophiaca." [79] "Rhizotomumena."

[80] Theriaca, l. 596, *et seq.*

[81] The wild hemp of Pliny is the Althæa cannabina of Linnæus: the hemp marsh-mallow.

[82] The cultivated hemp is the Cannabis sativa of Linnæus.

Hempseed,[83] it is said, renders men impotent: the juice of this seed will extract worms from the ears, or any insect which may have entered them, though at the cost of producing head-ache. The virtues of hemp, it is said, are so great, that an infusion of it in water will cause it to coagulate:[84] hence it is, that if taken in water, it will arrest looseness in beasts of burden. A decoction of the root in water, relaxes contractions of the joints, and cures gout and similar maladies. It is applied raw to burns, but it must be frequently changed, so as not to let it dry.

CHAP. 98.—FENNEL-GIANT: EIGHT REMEDIES.

Fennel-giant[85] has a seed similar to that of dill. That which has a single stem, bifurcated[86] at the top, is generally thought to be the female plant. The stalks of it are eaten boiled;[87] and, pickled in brine and honey, they are recommended as particularly beneficial to the stomach;[88] if taken, however, in too large quantities, they are apt to produce head-ache. The root of it in doses of one denarius to two cyathi of wine, is used in drink for the stings of serpents, and the root itself is applied topically for the same purpose, as also for the cure of gripings of the stomach. Taken in oil and vinegar, it is used as a check for excessive perspirations, in fevers even. The inspissated juice of fennel-giant, taken in quantities the size of a bean, acts as a purgative;[89] and the pith[90] of it is good for the uterus, as well as all the maladies previously mentioned. To arrest hæmorrhage, ten of the seeds are taken in drink, bruised in wine, or else with the

[83] He is speaking of the hemp marsh-mallow here, and not the real hemp; though at the same time he mingles with his statement several facts which are stated by Dioscorides with reference to the genuine hemp. See B. xix. c. 56.

[84] This is evidently stated in reference to the hemp-mallow.

[85] For an account of the Ferula, see B. xiii. c. 42.

[86] An accidental circumstance, Fée says, and no distinctive mark of sex or species.

[87] Fée thinks that Pliny's meaning is, that it is eaten as a confection, similar to those of angelica and parsley stalks at the present day. That, however, would hardly appear to be the sense of the passage. In B. xix. c. 56, he speaks of it being dried and used as a seasoning.

[88] Fennel-giant is considered to be a good stomachic.

[89] This, Fée thinks, is probably the fact.

[90] The pith, in reality, of the Umbelliferæ, is insipid and inert.

pith of the plant. There are some persons who think that the seed should be administered for epilepsy, from the fourth to the seventh day of the moon, in doses of one spoonful.

Fennel-giant is naturally so inimical to the muræna, that the very touch of it even will kill that fish. Castor was of opinion that the juice of the root is extremely beneficial to the sight.

CHAP. 99.—THE THISTLE OR SCOLYMOS: SIX REMEDIES.

We have already[91] spoken, when treating of the garden plants, of the cultivation of the thistle; we may as well, therefore, not delay to mention its medicinal properties. Of wild thistles there are two varieties; one[92] of which throws out numerous stalks immediately it leaves the ground, the other[93] being thicker, and having but a single stem. They have, both of them, a few leaves only, and covered with prickles, the head of the plant being protected by thorny points: the last mentioned, however, puts forth in the middle of these points a purple blossom, which turns white with great rapidity, and is carried off by the wind; the Greeks give it the name of "scolymos."

This plant, gathered before it blossoms, and beaten up and subjected to pressure, produces a juice, which, applied to the head, makes the hair grow again when it has fallen off through alopecy. The root of either kind, boiled in water, creates thirst, it is said, in those who drink it. It strengthens the stomach also, and if we are to believe what is said, has some influence upon the womb in promoting the conception of male offspring: at all events, Glaucias, who seems to have paid the most attention to the subject, has written to that effect. The thin juice, like mastich, which exudes from these plants, imparts sweetness to the breath.

CHAP. 100. (24.)—THE COMPOSITION OF THERIACA.

But as we are now about to leave the garden plants, we will take this opportunity of describing a very famous preparation

[91] In B. xix. c. 43.

[92] This, Fée considers to be the Cinara carduncellus of Linnæus, artichoke thistle, or Cardonette of Provence.

[93] The Cinara scolymus of Linnæus probably, our artichoke, which the ancients do not appear to have eaten. Both the thistle and the artichoke are now no longer employed in medicine.

extracted from them as an antidote against the stings of all kinds of venomous animals: it is inscribed in verse[94] upon a stone in the Temple of Æsculapius at Cos.

Take two denarii of wild thyme, and the same quantity of opopanax and meum respectively; one denarius of trefoil seed; and of aniseed, fennel-seed, ammi, and parsley, six denarii respectively, with twelve denarii of meal of fitches. Beat up these ingredients together, and pass them through a sieve; after which they must be kneaded with the best wine that can be had, and then made into lozenges of one victoriatus[95] each: one of these is to be given to the patient, steeped in three cyathi of wine. King Antiochus[96] the Great, it is said, employed this theriaca[97] against all kinds of venomous animals, the asp excepted.

SUMMARY.—Remarkable facts, narratives, and observations, one thousand, five hundred, and six.

ROMAN AUTHORS QUOTED.—Cato[1] the Censor, M. Varro,[2] Pompeius Lenæus,[3] C. Valgius,[4] Hyginus,[5] Sextius Niger[6]

[94] Galen gives these lines, sixteen in number, in his work De Antidot. B. ii. c. 14; the proportions, however, differ from those given by Pliny.

[95] Half a denarius; the weight being so called from the coin which was stamped with the image of the Goddess of Victory. See B. xxxiii. c. 13.

[96] Antiochus II., the father of Antiochus Epiphanes.

[97] Or "antidote." In this term has originated our word "treacle," in the Elizabethan age spelt "triacle." The medicinal virtues of this composition were believed in, Fée remarks, so recently as the latter half of the last century. The most celebrated, however, of all the "theriacæ" of the ancients, was the "Theriaca Andromachi," invented by Andromachus, the physician of the Emperor Nero, and very similar to that composed by Mithridates, king of Pontus, and by means of which he was rendered proof, it is said, against all poisons. See a very learned and interesting account of the Theriacæ of the ancients, by Dr. Greenhill, in Smith's Dictionary of Greek and Roman Antiquities. His articles "Pharmaceutica," and "Therapeutica," will also be found well worth attention by the reader of Pliny.

[1] See end of B. iii.

[2] See end of B. ii.

[3] See end of B. xiv.

[4] He is also mentioned in B. xxv. c. 2, as having commenced a treatise on Medicinal Plants, which he did not live to complete. It is not improbable that he is the same Valgius that is mentioned in high terms by Horace, B. i. Sat. 10.

[5] See end of B. iii.

[6] See end of B. xii.

who wrote in Greek, Julius Bassus[7] who wrote in Greek, Celsus,[8] Antonius Castor.[9]

FOREIGN AUTHORS QUOTED.—Democritus,[10] Theophrastus,[11] Orpheus,[12] Menander[13] who wrote the "Biochresta," Pythagoras,[14] Nicander.[15]

MEDICAL AUTHORS QUOTED.—Chrysippus,[16] Diocles,[17] Ophelion,[18] Heraclides,[19] Hicesius,[20] Dionysius,[21] Apollodorus[22] of Citium, Apollodorus[23] of Tarentum, Praxagoras,[24] Plistoni-

[7] Supposed by some to be the same with the Bassus Tullius mentioned by ancient writers as the friend of Niger, possibly the Sextius Niger here mentioned.

[8] See end of B. vii.

[9] He lived at Rome in the first century of the Christian era, and possessed a botanical garden, probably the earliest mentioned. He lived more than a hundred years, in perfect health both of body and mind. See B. xxv. c. 5.

[10] See end of B. ii.

[11] See end of B. iii.

[12] A mystic personage of the early Grecian Mythology, under whose name many spurious works were circulated. Pliny says, B. xxv. c. 2, that he was the first who wrote with any degree of attention on the subject of Plants.

[13] See end of B. xix.

[14] See end of B. ii.

[15] See end of B. viii.

[16] Probably Chrysippus of Cnidos, a pupil of Eudoxus and Philistion, father of Chrysippus, the physician to Ptolemy Soter, and tutor to Erasistratus. Others, again, think that the work "on the Cabbage," mentioned by Pliny in c. 33, was written by another Chrysippus, a pupil of Erasistratus, in the third century B.C.

[17] A native of Carystus, in Eubœa, who lived in the fourth century B.C. He belonged to the medical sect of the Dogmatici, and wrote several medical works, of which the titles only and a few fragments remain.

[18] Of this writer nothing whatever is known.

[19] For Heraclides of Heraclea, see end of B. xii.; for Heraclides of Pontus, see end of B. iv.; and for Heraclides of Tarentum, see end of B. xii. They were all physicians.

[20] See end of B. xv.

[21] See end of B. xii.

[22] It was probably this personage, or the one next mentioned, who wrote to Ptolemy, one of the kings of Egypt, giving him directions as to what wines he should drink. See B. xiv. c. 9. A person of this name wrote a work on Ointments and Chaplets, quoted by Athenæus, and another on Venomous Animals, quoted by the same author. This last is probably the work referred to by Pliny, B. xxi. cc. 15, 29, &c. It has been suggested also, that the proper reading here is "Apollonius" of Citium, a pupil of Zopyrus, a physician of Alexandria.

[23] See the preceding Note.

[24] A celebrated physician, a native of the island of Cos. He belonged to the medical sect of the Dogmatici, and flourished probably in the fourth century B.C. He was more particularly celebrated for his comparatively accurate knowledge of anatomy. The titles only and a few fragments of his works survive.

cus,[25] Medius,[26] Dieuches,[27] Cleophantus,[28] Philistion,[29] Asclepiades,[30] Crateuas,[31] Petronius Diodotus,[32] Iollas,[33] Erasistratus,[34] Diagoras,[35] Andreas,[36] Mnesides,[37] Epicharmus,[38] Damion, [39] Dalion, [40] Sosimenes, [41] Tlepolemus, [42] Metrodo-

[25] A pupil of Praxagoras. He appears to have written a work on Anatomy, quoted more than once by Galen.

[26] A pupil of Chrysippus of Cnidos, and who lived probably in the fourth and third centuries B.C. Galen speaks of him as being held in great repute among the Greeks.

[27] He flourished in the fourth century B.C., and belonged to the medical sect of the Dogmatici. He wrote some medical works, of which nothing but a few fragments remain.

[28] He lived probably about the beginning of the third century B.C., as he was the tutor of Antigenes and Mnemon. He seems to have been famous for his medicinal prescriptions of wine, and the quantities of cold water which he gave to his patients.

[29] Born either in Sicily or at Locri Epizephyrii, in Italy. He is supposed to have lived in the fourth century B.C. By some persons he was thought to have been one of the founders of the sect of the Empirici. He wrote works on Materia Medica and Cookery, and is several times quoted by Pliny and Galen.

[30] See end of B. vii.

[31] A Greek herbalist, who lived about the beginning of the first century B.C. He is mentioned by Galen as one of the most eminent writers on Materia Medica. Another physician of the same name is supposed to have lived in the time of Hippocrates.

[32] A Greek physician, supposed to have lived in or before the first century B.C. Dioscorides and Saint Epiphanius speak of Petronius *and* Diodotus, making them different persons; and it is not improbable that the true reading in c. 32 of this Book, is "Petronius *et* Diodotus."

[33] See end of B. xii.

[34] See end of B. xi.

[35] See end of B. xii.

[36] It is probable that there were several Greek physicians of this name; but the only one of whom anything certain is known is the physician to Ptolemy Philopater, king of Egypt, in whose tent he was killed by Theodotus, the Ætolian, B.C. 217. He was probably the first writer on hydrophobia. Eratosthenes is said to have accused him of plagiarism.

[37] See end of B. xii.

[38] It is doubtful if the person of this name to whom Pliny attributes a work on the Cabbage, in cc. 34 and 36 of this Book, was the same individual as Epicharmus of Cos, the Comic poet, born B.C. 540. It has been suggested that the botanical writer was a different personage, the brother of the Comic poet Demologus.

[39] Possibly the same person as the Damon mentioned at the end of B. vii. He is mentioned in c. 40 of this Book, and in B. xxiv. c. 120, and wrote a work on the Onion.

[40] See end of B. vi.

[41] Beyond the mention made of him in c. 73 of this Book, nothing whatever is known relative to this writer.

[42] Beyond the mention made of him in c. 73, nothing is known of him. Some read "Theopolemus."

rus,[43] Solo,[44] Lycus,[45] Olympias[46] of Thebes, Philinus,[47] Petrichus,[48] Micton,[49] Glaucias,[50] Xenocrates.[51]

[43] Probably Metrodorus of Chïos, a philosopher, who flourished about B.C. 330, and professed the doctrine of the Sceptics. Cicero, Acad. ii. 23, § 73, gives a translation of the first sentence of his work "On Nature."

[44] A physician of Smyrna. He is called Solon the Dietetic, by Galen; but nothing further seems to be known of his history.

[45] See end of B. xii.

[46] A Theban authoress, who wrote on Medicine; mentioned also by Plinius Valerianus, the physician, and Pollux.

[47] A Greek physician, a native of Cos, the reputed founder of the sect of the Empirici. He probably lived in the third century B.C. From Athenæus we learn that he wrote a work on Botany. A parallel has been drawn between Philinus and the late Dr. Hahnemann, by F. F. Brisken, Berlin, 1834.

[48] See end of B. xix.

[49] The Scholiast on Nicander mentions a treatise on Botany written by a person of this name: and a work of his on Medicine is mentioned by Labbe as existing in manuscript in the Library at Florence.

[50] A Greek physician of this name belonging to the sect of the Empirici, lived probably in the third or second century B.C. Galen mentions him as one of the earliest commentators on the works of Hippocrates. It is uncertain, however, whether he is the person so often quoted by Pliny.

[51] A physician of Aphrodisias, in Cilicia, who lived in the reign of Tiberius. He wrote some pharmaceutical works, and is censured by Galen for his disgusting remedies, such as human brains, flesh, urine, liver, excrements, &c. There is a short essay by him still in existence, on the Aliments derived from the Aquatic Animals.

BOOK XXI.

AN ACCOUNT OF FLOWERS, AND THOSE USED FOR CHAPLETS MORE PARTICULARLY.

CHAP. 1. (1.)—THE NATURE OF FLOWERS AND GARLANDS.

Cato has recommended that flowers for making chaplets should also be cultivated in the garden; varieties remarkable for a delicacy which it is quite impossible to express, inasmuch as no individual can find such facilities for describing them as Nature does for bestowing on them their numerous tints —Nature, who here in especial shows herself in a sportive mood, and takes a delight in the prolific display of her varied productions. The other[1] plants she has produced for our use and our nutriment, and to them accordingly she has granted years and even ages of duration: but as for the flowers and their perfumes, she has given them birth for but a day—a mighty lesson to man, we see, to teach him that that which in its career is the most beauteous and the most attractive to the eye, is the very first to fade and die.

Even the limner's art itself possesses no resources for reproducing the colours of the flowers in all their varied tints and combinations, whether we view them in groups alternately blending their hues, or whether arranged in festoons, each variety by[2] itself, now assuming a circular form, now running obliquely, and now disposed in a spiral pattern; or whether, as we see sometimes, one wreath is interwoven within another.

CHAP. 2. (2.)—GARLANDS AND CHAPLETS.

The ancients used chaplets of diminutive size, called "struppi;"[3] from which comes our name for a chaplet, "stro-

[1] See B. xxii. c. 1.

[2] "Sive privatis generum funiculis in orbem, in obliquum, in ambitum; quædam coronæ per coronas currunt." As we know but little of the forms of the garlands and chaplets of the ancients, the exact translation of this passage is very doubtful.

[3] According to Boettiger, the word "struppus" means a string arranged as a fillet or diadem.

phiolum." Indeed, it was only by very slow degrees that this last word[4] became generalized, as the chaplets that were used at sacrifices, or were granted as the reward of military valour, asserted their exclusive right to the name of "corona." As for garlands, when they came to be made of flowers, they received the name of "serta," from the verb "sero,"[5] or else from our word "series."[6] The use[7] of flowers for garlands is not so very ancient, among the Greeks even.

CHAP. 3. — WHO INVENTED THE ART OF MAKING GARLANDS: WHEN THEY FIRST RECEIVED THE NAME OF "COROLLÆ," AND FOR WHAT REASON.

For in early times it was the usage to crown the victors in the sacred contests with branches of trees: and it was only at a later period, that they began to vary their tints by the combination[8] of flowers, to heighten the effect in turn by their colour and their smell—an invention due to the ingenuity of the painter Pausias, at Sicyon,[9] and the garland-maker Glycera, a female to whom he was greatly attached, and whose handiwork was imitated by him in colours. Challenging him to a trial of skill, she would repeatedly vary her designs, and thus it was in reality a contest between art and Nature; a fact which we find attested by pictures of that artist even still in existence, more particularly the one known as the "Stephaneplocos,"[10] in which he has given a likeness of Glycera herself. This invention, therefore, is only to be traced to later than the Hundredth[11] Olympiad.

Chaplets of flowers being now the fashion, it was not long before those came into vogue which are known to us as

[4] Fée makes the word "vocabulum" apply to "corona," and not to "struppus;" but the passage will hardly admit of that rendering.

[5] "To bind" or "join together."

[6] A "connected line," from the verb "sero."

[7] By "quod," Hardouin takes Pliny to mean, the use of the word σπαρτὸν, among the Greeks, corresponding with the Latin word "sertum."

[8] These chaplets, we learn from Festus, were called "pancarpiæ." The olive, oak, laurel, and myrtle, were the trees first used for chaplets.

[9] See B. xxxv. c. 40.

[10] The "Chaplet-weaver." See B. xxxv. c. 40.

[11] B.C. 380.

Egyptian[12] chaplets; and then the winter chaplets, made for the time at which Earth refuses her flowers, of thin laminæ of horn stained various colours. By slow degrees, too, the name was introduced at Rome, these garlands being known there at first as "corollæ," a designation given them to express the remarkable delicacy[13] of their texture. In more recent times, again, when the chaplets presented were made of thin plates[14] of copper, gilt or silvered, they assumed the name of "corollaria."

CHAP. 4. (3.)—WHO WAS THE FIRST TO GIVE CHAPLETS WITH LEAVES OF SILVER AND GOLD. LEMNISCI: WHO WAS THE FIRST TO EMBOSS THEM.

Crassus Dives[15] was the first who gave chaplets with artificial leaves of silver and gold, at the games celebrated by him. To embellish these chaplets, and to confer additional honour on them, lemnisci were added, in imitation of the Etruscan chaplets, which ought properly to have none but lemnisci[16] made of gold. For a long period these lemnisci were destitute of ornament:[17] P. Claudius Pulcher[18] was the first who taught us to emboss[19] them, and added leaves of tinsel to the laminæ[20] of which the lemniscus was formed.

CHAP. 5.—THE GREAT HONOUR IN WHICH CHAPLETS WERE HELD BY THE ANCIENTS.

Chaplets, however, were always held in a high degree of estimation, those even which were acquired at the public games. For it was the usage of the citizens to go down in person to take part in the contests of the Circus, and to send their slaves and horses thither as well. Hence it is that we find it thus written in the laws of the Twelve Tables:

12 From Athenæus, B. xv. c. 2, *et seq.*, we learn that the Egyptian chaplets were made of ivy, narcissus, pomegranate blossoms, &c.

13 "Corolla," being the diminutive of "corona."

14 Or tinsel.

15 The "Rich."

16 Ribbons or streamers.

17 "Puri."

18 Consul, A.U.C. 570.

19 Or "engrave," "cælare." He is probably speaking here of golden lemnisci.

20 "Philyræ." This was properly the inner bark of the linden-tree; but it is not improbable that thin plates of metal were also so called, from the resemblance. The passage, however, admits of various modes of explanation.

"If any person has gained a chaplet himself, or by his money,[21] let the same be given to him as the reward of his prowess." There is no doubt that by the words "gained by his money," the laws meant a chaplet which had been gained by his slaves or horses. Well then, what was the honour acquired thereby? It was the right secured by the victor, for himself and for his parents, after death, to be crowned without fail, while the body was laid out in the house,[22] and on its being carried[23] to the tomb.

On other occasions, chaplets were not indiscriminately worn, not even those which had been won in the games.

CHAP. 6.—THE SEVERITY OF THE ANCIENTS IN REFERENCE TO CHAPLETS.

Indeed the rules upon this point were remarkably severe. L. Fulvius, a banker,[24] having been accused, at the time of the Second Punic War, of looking down from the balcony[25] of his house upon the Forum, with a chaplet of roses upon his head, was imprisoned by order of the Senate, and was not liberated before the war was brought to a close. P. Munatius, having placed upon his head a chaplet of flowers taken from the statue of Marsyas,[26] was condemned by the Triumviri to be put in chains. Upon his making appeal to the tribunes of the people, they refused to intercede in his behalf —a very different state of things to that at Athens, where the young men,[27] in their drunken revelry, were in the habit,

[21] "Pecuniâ." Fée compares this usage with the employment of jockies at horse-races in England and France.

[22] "Intus positus esset."

[23] "Foris ferretur."

[24] Or "money-changer," "argentarius."

[25] "E pergulâ suâ." Scaliger thinks that the "pergula" was a part of a house built out into the street, while, according to Ernesti, it was a little room in the upper part of a house. In B. xxxv. c. 36, it clearly means a room on the ground-floor.

[26] In the Fora of ancient cities there was frequently a statue of this mythological personage, with one hand erect, in token, Servius says (on B. iv. l. 58 of the Æneid), of the freedom of the state, Marsyas having been the minister of Bacchus, the god of liberty. His statue in the Forum of Rome was the place of assembly for the courtesans of that city, who used to crown it with chaplets of flowers. See also Horace i. Sat. 6. l. 120; Juvenal, Sat. 9. l. 1 and 2; and Martial, ii. Ep. 64. l. 7.

[27] Cujacius thinks that Pliny has in view here Polemon of Athens, who when a young man, in his drunken revelry, burst into the school of Xenocrates, the philosopher, with his fellow-revellers, wearing his festive gar-

before midday, of making their way into the very schools of the philosophers even. Among ourselves, no such instance of a similar licentiousness is to be found, unless, indeed, in the case of the daughter[28] of the late Emperor Augustus, who, in her nocturnal debaucheries, placed a chaplet on the statue[29] of Marsyas, conduct deeply deplored in the letters of that god.[30]

CHAP. 7.—A CITIZEN DECKED WITH FLOWERS BY THE ROMAN PEOPLE.

Scipio is the only person that ever received from the Roman people the honour of being decked with flowers. This Scipio received the surname of Serapio,[31] from his remarkable resemblance to a certain person of that name who dealt in pigs. He died in his tribuneship, greatly beloved by the people, and in every way worthy of the family of the Africani. The property he left was not sufficient to pay the expenses of his burial; upon which the people made a subscription and contracted[32] for his funeral, flowers being scattered upon the body from every possible quarter[33] as it was borne along.

CHAP. 8. — PLAITED CHAPLETS. NEEDLE-WORK CHAPLETS. NARD-LEAF CHAPLETS. SILKEN CHAPLETS.

In those days, too, chaplets were employed in honour of the gods, the Lares, public as well as domestic, the sepulchres,[34] and the Manes. The highest place, however, in public estimation, was held by the plaited chaplet; such as we find used

land on his head. Being arrested, however, by the discourse, he stopped to listen, and at length, tearing off the garland, determined to enter on a more abstemious course of life. Becoming an ardent disciple of Xenocrates, he ultimately succeeded him at the head of the school. The passage as given in the text, from its apparent incompleteness, would appear to be in a mutilated state.

[28] Julia. See B. vii. c. 46.

[29] Thus acknowledging herself to be no better than a common courtesan.

[30] "Illius dei."

[31] See B. vii. c. 10.

[32] "Funus elocavit."

[33] "E prospectu omni." "From every look-out:" *i.e.* from the roofs, doors, and windows.

[34] This usage is still observed in the *immortelles*, laid on the tombs of departed friends, in Catholic countries on the continent. Tibullus alludes to it, B. ii. El. 4:

"Atque aliquis senior veteres veneratus amores,
Annua constructo serta dabit tumulo."

by the Salii in their sacred rites, and at the solemnization of their yearly[35] banquets. In later times, the rose chaplet has been adopted, and luxury arose at last to such a pitch that a chaplet was held in no esteem at all if it did not consist entirely of leaves sown together with the needle. More recently, again, they have been imported from India, or from nations beyond the countries of India.

But it is looked upon as the most refined of all, to present chaplets made of nard leaves, or else of silk of many colours steeped in unguents. Such is the pitch to which the luxuriousness of our women has at last arrived!

CHAP. 9. — AUTHORS WHO HAVE WRITTEN ON FLOWERS. AN ANECDOTE RELATIVE TO QUEEN CLEOPATRA AND CHAPLETS.

Among the Greeks, the physicians Mnesitheus and Callimachus have written separate treatises on the subject of chaplets, making mention of such flowers as are injurious to the head.[36] For, in fact, the health is here concerned to some extent, as it is at the moments of carousal and gaiety in particular that penetrating odours steal insidiously upon the brain—witness an instance in the wicked cunning displayed upon one occasion by Cleopatra.

At the time when preparations were making for the battle that was eventually fought at Actium, Antonius held the queen in such extreme distrust as to be in dread of her very attentions even, and would not so much as touch his food, unless another person had tasted it first. Upon this, the queen, it is said, wishing to amuse herself with his fears, had the extremities of the flowers in a chaplet dipped in poison, and then placed it upon her head.[37] After a time, as the hilarity increased apace, she challenged Antonius to swallow the chap-

[35] At the conclusion of the festival of Mars on the 1st of March, and for several successive days. These entertainments were celebrated in the Temple of that god, and were proverbial for their excellence.

[36] It is a well-known fact, as Fée remarks, that the smell of flowers is productive, in some persons, of head-ache, nausea, and vertigo. He states also that persons have been known to meet their death from sleeping all night in the midst of odoriferous flowers.

[37] "Ipsaque capiti imposita." Holland and Ajasson render this as though Cleopatra placed the garland on Antony's head, and not her own. Littré agrees with the translation here adopted.

lets, mixed up with their drink. Who, under such circumstances as these, could have apprehended treachery? Accordingly, the leaves were stripped from off the chaplet, and thrown into the cup. Just as Antonius was on the very point of drinking, she arrested his arm with her hand.—"Behold, Marcus Antonius," said she, "the woman against whom you are so careful to take these new precautions of yours in employing your tasters! And would then, if I could exist without you, either means or opportunity of effecting my purpose be wanting to me?" Saying this, she ordered a man to be brought from prison, and made him drink off the potion; he did so, and fell dead[38] upon the spot.

Besides the two authors above-mentioned, Theophrastus,[39] among the Greeks, has written on the subject of flowers. Some of our own writers also have given the title of "Anthologica" to their works, but no one, to my knowledge at least, has treated expressly[40] of flowers. In fact, we ourselves have no intention here of discussing the mode of wearing chaplets, for that would be frivolous[41] indeed; but shall proceed to state such particulars in relation to flowers as shall appear to us deserving of remark.

CHAP. 10. (4.)—THE ROSE: TWELVE VARIETIES OF IT.

The people of our country were acquainted with but very few garland flowers among the garden plants, and those few hardly any but the violet and the rose. The plant which bears the rose is, properly speaking, more of a thorn than a shrub—indeed, we sometimes find it growing on a bramble[42] even; the flower having, even then, a pleasant smell, though by no means penetrating. The flower in all roses is originally enclosed in a bud,[43] with a grained surface within, which gradually swells, and assumes the form of a green pointed cone, similar to our alabaster[44] unguent boxes in shape. Gradually

[38] Fée remarks that we know of no poisons, hydrocyanic or prussic acid excepted, so instantaneous in their effects as this; and that it is very doubtful if they were acquainted with that poison.

[39] Hist. Plant. B. vi. cc. 6, 7.

[40] "Persecutus est."

[41] A characteristic, it would appear, of the greater part of the information already given in this Book.

[42] He alludes to the wild rose or eglantine. See B. xvi. c. 71.

[43] "Granoso cortice."

[44] Boxes of a pyramidal shape. See B. ix. c. 56.

Fée in error.

acquiring a ruddy tint, this bud opens little by little, until at last it comes into full blow, developing the calyx, and embracing the yellow-pointed filaments which stand erect in the centre of it.

The employment of the rose in chaplets is, so to say, the least[45] use that is made of it. The flower is steeped in oil, a practice which has prevailed from the times of the Trojan war, as Homer[46] bears witness; in addition to which, it now forms an ingredient in our unguents, as mentioned on a previous occasion.[47] It is employed also by itself for certain medicinal purposes, and is used in plasters and eye-salves[48] for its penetrating qualities: it is used, also, to perfume the delicacies of our banquets, and is never attended with any noxious results.

The most esteemed kinds of rose among us are those of Prænestè[49] and Campania.[50] Some persons have added to these varieties the rose of Miletus,[51] the flower of which is an extremely brilliant red, and has never more than a dozen petals. The next to it is the rose of Trachyn,[52] not so red as the last, and then that of Alabanda,[53] with whitish petals, but not so highly esteemed. The least esteemed of all, however, is the thorn rose,[54] the petals of which are numerous, but extremely

[45] Still, even for that purpose the rose was very extensively used. One ancient author states that, even in the middle of winter, the more luxurious Romans were not satisfied without roses swimming in their Falernian wine; and we find Horace repeatedly alluding to the chaplets of roses worn by the guests at banquets. Hence probably arose the expression, "Under the rose." Fée is evidently mistaken in thinking that Pliny implies here, that it was but rarely used in chaplets.

[46] Il. xxiii. l. 186. [47] B. xiii. c. 2.

[48] "Collyriis."

[49] Clusius was of opinion that this was the Provence rose, the Rosa Gallica of Linnæus.

[50] The same rose, probably, of which Virgil says, Georg. B. iv. l. 119, "Biferique rosaria Pæsti"—"And the rose-beds of Pæstum, that bear twice in the year." It has been suggested that it is identical with the Rosa alba vulgaris major of Bauhin, the Rosa alba of Decandolle: but, as Fée says, it is very questionable if this is correct, this white rose blossoming but once a year.

[51] A simple variety of the Rosa Gallica of Linnæus, Fée thinks.

[52] See B. iv. c. 14. According to J. Bauhin, this is the pale, flesh-coloured rose, called the "rose of France,"—the "Rosa rubello flore, majore, pleno, incarnata vulgo." Others, again, take it to be the Damascus rose.

[53] See B. v. c. 29. A variety of the white rose, Fée thinks, the determination of which must be sought among the Eglantines.

[54] "Spiniola." A variety belonging to or approaching the Eglantine

small. The essential points of difference in the rose are the number[55] of the petals, the comparative number[56] of thorns on the stem, the colour, and the smell. The number of the petals, which is never less than five, goes on increasing in amount, till we find one variety with as many as a hundred, and thence known as the "centifolia:"[57] in Italy, it is to be found in Campania, and in Greece, in the vicinity of Philippi, though this last is not the place of its natural[58] growth. Mount Pangæus,[59] in the same vicinity, produces a rose with numerous petals of diminutive size: the people of those parts are in the habit of transplanting it, a method which greatly tends to improve its growth. This kind, however, is not remarkable for its smell, nor yet is the rose which has a very large or very broad petal: indeed, we may state in a few words, that the best proof of the perfume of the flower is the comparative roughness of the calyx.[60]

Cæpio, who lived in the reign of the Emperor Tiberius, asserts that the centifolia is never employed for chaplets, except at the extreme[61] points of union as it were, being remarkable neither for its smell[62] nor its beauty. There is another variety

in all probability. Fée makes mention here of a kind called the Rosa myriacantha by Decandolle (the "thousand-thorn rose"), which is found in great abundance in the south of Europe, and other parts of it.

55 Fée remarks on this passage, that the beauty of the flower and the number of the petals are always in an inverse proportion to the number of thorns, which disappear successively the more carefully the plant is cultivated.

56 This is most probably the meaning of "Asperitate, levore."

57 Still known as the "Rosa centifolia." Its petals sometimes exceed *three* hundred in number; and it is the most esteemed of all for its fragrant smell.

58 "Non suæ terræ proventu."

59 This rose is mentioned also by Theophrastus, Hist. Plant. B. vi. c. 6. From the description that Pliny gives of it, Fée is inclined to think that it is some variety of the Rosa rubrifolia, which is often found in mountainous localities.

60 This assertion is borrowed from Theophrastus, Hist. Plant. B. vi. c. 6. Fée remarks that there is no truth in it. It is not improbable, however, that the word "cortex" here may mean, not the calyx, but the bark of the stem, in reference to its exemption from thorns. The τραχὺ τὸ κάτω of Theophrastus would seem to admit of that rendering. See Note 55 above.

61 "Extremas velut ad cardines."

62 This is not the case with the Rosa centifolia of modern botany. See Note 57 above. It is not improbable, however, that the reading is "probabilis," and that this passage belongs to the next sentence.

of rose, too, called the "Grecian" rose by our people, and "lychnis"[63] by the Greeks: it grows nowhere except in humid soils, and has never more than five petals: it does not exceed the violet in size, and is destitute of smell. There is another kind, again, known to us as the "Græcula,"[64] the petals of which are tightly rolled together, and which never open except when pressed in the hand, it having always the appearance, in fact, of being in bud: the petals of it are remarkably large. Another kind, again, springs from a stem like that of the mallow, the leaves being similar to those of the olive—the name given to it is "macetum."[65] There is the rose of autumn, too, known to us as the "coroniola,"[66] which is of a middle size, between the varieties just mentioned. All these kinds, however, are destitute of smell, with the exception of the coroniola, and the one which grows on the bramble:[67] so extended is the scope for fictitious[68] productions!

And, indeed, the genuine rose, for the most part, is indebted for its qualities to the nature of the soil. That of Cyrenæ[69] is the most odoriferous of all, and hence it is that the unguents of that place are so remarkably fine: at Carthage, again, in Spain, there are early[70] roses throughout all the winter. The temperature, too, of the climate is not without its influence: for in some years we find the roses much less odoriferous than in others; in addition to which, their smell is always more powerful when grown in dry soils[71] than in humid ones. The

[63] The Lychnis, Fée remarks, is erroneously classed by Pliny among the roses. It is generally agreed among naturalists that it is the garden flower, the Agrostemma coronaria of Linnæus; which, however, does not grow in humid soils, but in steep, rocky places.

[64] Or "small Greek" rose. Some commentators have identified it with the Rosa silvestris, odorata, flore albo of C. Bauhin, a wild white rose.

[65] Sillig thinks that this may mean the "Macedonian" rose. Another reading is "moscheuton." Fée says that it is not a rose at all, but one of the Malvaceæ belonging to the genus Alcæa; one variety of which is called the Alcæa rosa.

[66] Or "little chaplet." Possibly a variety of the Eglantine, the Rosa canina or dog-rose, Fée suggests.

[67] The Eglantine.

[68] This seems to be the meaning of "tot modis adulteratur:" the roses without smell appearing to him to be not *genuine* roses.

[69] The Rosa Damascena of Miller, Fée thinks, our Damascus rose.

[70] The earliest rose in France and Spain, Fée says, is the "pompon," the variety Pomponæa of the Rosa centifolia.

[71] This is consistent with modern experience.

rose does not admit of being planted in either a rich or an argillaceous soil, nor yet on irrigated land; being contented with a thin, light earth, and more particularly attached to ground on which old building rubbish has been laid.

The rose of Campania is early, that of Miletus late, but it is the rose of Præneste that goes off the very latest of all. For the rose, the ground is generally dug to a greater depth than it is for corn, but not so deep as for the vine. It grows but very slowly[72] from the seed, which is found in the calyx beneath the petals of the flower, covered with a sort of down; hence it is that the method of grafting is usually the one preferred, or else propagation from the eyes of the root, as in the reed.[73] One kind is grafted, which bears a pale flower, with thorny branches of a remarkable length; it belongs to the quinquefolia variety, being one of the Greek roses.[74] All roses are improved by being pruned and cauterized; transplanting, too, makes them grow, like the vine, all the better, and with the greatest rapidity. The slips are cut some four fingers in length or more, and are planted immediately after the setting of the Vergiliæ; then, while the west winds are prevalent, they are transplanted at intervals of a foot, the earth being frequently turned up about them.

Persons whose object it is to grow early roses, make a hole a foot in width about the root, and pour warm water into it, at the period when the buds are beginning to put forth.[75]

CHAP. 11. (5.)—THE LILY: FOUR VARIETIES OF IT.

The lily holds the next highest rank after the rose, and has a certain affinity[76] with it in respect of its unguent and the oil extracted from it, which is known to us as "lirinon."[77]

[72] From Theophrastus, Hist. Plant. B. vi. c. 6. The rose is but very rarely reproduced from seed.

[73] See B. xvi. c. 67, and B. xvii. c. 33.

[74] Previously mentioned in this Chapter. The meaning of this passage, however, is extremely doubtful. "Unum genus inseritur pallidæ, spinosæ, longissimis virgis, quinquifoliæ, quæ Græcis altera est."

[75] If the water was only lukewarm, Fée says, it would be of no use, and if hotter, the speedy death of the tree would be the result.

[76] "Quâdam cognatione." He alludes to a maceration of the petals of the rose and lily in oil. The aroma of the lily, Fée says, has not been fixed by any method yet found.

[77] See B. xiii. c. 2.

Blended, too, with roses, the lily[78] produces a remarkably fine effect; for it begins to make its appearance, in fact, just as the rose is in the very middle of its season. There is no flower that grows to a greater height than the lily, sometimes, indeed, as much as three cubits; the head of it being always drooping, as though the neck of the flower were unable to support its weight. The whiteness of the lily is quite remarkable, the petals being striated on the exterior; the flower is narrow at the base, and gradually expanding in shape like a tapering[79] cup with the edges curving outwards, the fine pistils of the flower, and the stamens with their antheræ of a saffron colour, standing erect in the middle.[80] Hence the perfume of the lily, as well as its colour, is two-fold, there being one for the petals and another for the stamens. The difference, however, between them is but very small, and when the flower is employed for making lily unguents and oils, the petals are never rejected.

There is a flower, not unlike the lily, produced by the plant known to us as the "convolvulus."[81] It grows among shrubs, is totally destitute of smell, and has not the yellow antheræ of the lily within: only vying with it in its whiteness, it would almost appear to be the rough sketch[82] made by Nature when she was learning how to make the lily. The white lily is propagated in all the various ways which are employed for the cultivation of the rose,[83] as also by means of a certain tearlike

[78] The Lilium candidum of Linnæus. Fée remarks that the "Lilium" of the Romans and the λείριον of the Greeks is evidently derived from the *laleh* of the Persians.

[79] "Calathi." The "calathus" was a work-basket of tapering shape; it was also used for carrying fruits and flowers, Ovid, Art. Am. ii. 264. Cups, too, for wine were called by this name, Virg. Ecl. v. 71.

[80] As this passage has been somewhat amplified in the translation, it will perhaps be as well to insert it: "Resupinis per ambitum labris, tenuique pilo et staminum stantibus in medio crocis."

[81] The Convolvulus sæpium of modern botany; the only resemblance in which to the lily is in the colour, it being totally different in every other respect.

[82] "Rudimentum." She must have set to work in a very roundabout way, Fée thinks, and one in which it would be quite impossible for a naturalist to follow her.

[83] The white lily is reproduced from the offsets of the bulbs; and, as Fée justly remarks, it is highly absurd to compare the mode of cultivation with that of the rose, which is propagated from slips.

gum[84] which belongs to it, similarly to hipposelinum[85] in fact: indeed, there is no plant that is more prolific than this, a single root often giving birth to as many as fifty bulbs.[86] There is, also, a red lily, known by the name of "crinon"[87] to the Greeks, though there are some authors who call the flower of it "cynorrodon."[88] The most esteemed are those of Antiochia and Laodicea in Syria, and next to them that of Phaselis.[89] To the fourth rank belongs the flower that grows in Italy.

CHAP. 12.—THE NARCISSUS: THREE VARIETIES OF IT.

There is a purple[90] lily, too, which sometimes has a double stem; it differs only from the other lilies in having a more fleshy root and a bulb of larger size, but undivided:[91] the name given to it is "narcissus."[92] A second variety of this lily has a white flower, with a purple corolla. There is also this difference between the ordinary lily and the narcissus, that in the latter the leaves spring from the root of the plant. The finest are those which grow on the mountains of Lycia. A third variety is similar to the others in every respect, except that the corolla of the plant is green. They are all of them late[93] flowers: indeed, they only bloom after the setting of Arcturus,[94] and at the time of the autumnal equinox.

[84] This absurd notion is derived from Theophrastus, Hist. Plant. B. ii. c. 2, and B. vi. c. 6.

[85] See B. xix. c. 48.

[86] The root really consists of certain fine fibres, to which the bulbs, or rather cloves or offsets, are attached.

[87] Judging from what Theocritus says, in his 35th Idyl, the "crinon" would appear to have been a white lily. Sprengel, however, takes the red lily of Pliny to be the scarlet lily, the Lilium Chalcedonicum of Linnæus.

[88] Or "dog-rose:" a name now given to one of the wild roses.

[89] See B. xiii. c. 9.

[90] Fée remarks, that it is singular that Pliny, as also Virgil, Ecl. v. l. 38, should have given the epithet "purpureus" to the Narcissus. It is owing, Fée says, to the red nectary of the flower, which is also bordered with a very bright red.

[91] Into cloves or offsets.

[92] The Narcissus poeticus of Linnæus. Pliny gives the origin of its name in c. 75 of this Book.

[93] Though supported by Theophrastus, this assertion is quite erroneous. In France, even, Fée says, the Narcissus poeticus blossoms at the end of April, and sooner, probably, in the climates of Greece and Italy.

[94] See B. xviii. c. 76. It is just possible that Pliny and Theophrastus may be speaking of the Narcissus serotinus of Linnæus, which is found in great abundance in the southern provinces of Naples, and is undoubtedly the flower alluded to by Virgil in the words, "Nec sera comantem Narcissum," Georg. iv. ll. 122, 123.

CHAP. 13.—HOW SEED IS STAINED TO PRODUCE TINTED FLOWERS.

There has been invented[95] also a method of tinting the lily, thanks to the taste of mankind for monstrous productions. The dried stalks[96] of the lily are tied together in the month of July, and hung up in the smoke: then, in the following March, when the small knots[97] are beginning to disclose themselves, the stalks are left to steep in the lees of black or Greek wine, in order that they may contract its colour, and are then planted out in small trenches, some semi-sextarii of wine-lees being poured around them. By this method purple lilies are obtained, it being a very remarkable thing that we should be able to dye a plant to such a degree as to make it produce a coloured flower.

CHAP. 14. (6.)—HOW THE SEVERAL VARIETIES OF THE VIOLET ARE RESPECTIVELY PRODUCED, GROWN, AND CULTIVATED. THE THREE DIFFERENT COLOURS OF THE VIOLET. THE FIVE VARIETIES OF THE YELLOW VIOLET.

Next after the roses and the lilies, the violet is held in the highest esteem: of this there are several varieties, the purple,[98] the yellow, and the white, all of them reproduced from plants, like the cabbage. The purple violet, which springs up spontaneously in sunny spots, with a thin, meagre soil, has larger petals than the others, springing immediately from the root, which is of a fleshy substance. This violet has a name, too, distinct from the other wild kinds, being called "ion,"[99] and from it the ianthine[1] cloth takes its name.

Among the cultivated kinds, the yellow[2] violet is held in the greatest esteem. The Tusculan violet, and that known as the

[95] Fée remarks, that the extravagant proceeding here described by Pliny with a seriousness that is perfectly ridiculous, does not merit any discussion.

[96] When detached from the bulb, the stem of the lily will infallibly die.

[97] "Nudantibus se nodulis." There are no such knots in the lily, as Fée remarks.

[98] The Viola odorata of Linnæus.

[99] The Greek name.

[1] "Ianthina vestis," violet-coloured.

[2] Desfontaines identifies this with the Cheiranthus Cheiri; but Fée says that there is little doubt that it belongs to the Viola tricolor herbensis (pansy, or heart's-ease), in the petals of which the yellow predominates, and the type of which is the field violet, or Viola arvensis, the flowers of which are extremely small, and entirely yellow.

"marine"[3] violet, have petals somewhat broader than the others, but not so odoriferous; the Calatian[4] violet, too, which has a smaller leaf, is entirely destitute of smell. This last is a present to us from the autumn, the others from the spring.

CHAP. 15.—THE CALTHA. THE SCOPA REGIA.

Next to it comes the caltha, the flowers of which are of similar colour and size;[5] in the number of its petals, however, it surpasses the marine violet, the petals of which are never more than five in number. The marine violet is surpassed, too, by the other in smell; that of the caltha being very powerful. The smell, too, is no less powerful in the plant known as the "scopa regia;"[6] but there it is the leaves of the plant, and not the flowers, that are odoriferous.

CHAP. 16.—THE BACCHAR. THE COMBRETUM. ASARUM.

The bacchar,[7] too, by some persons known as "field nard,"

[3] This has been identified with the Cheiranthus incanus, the Cheiranthus tricuspidatus of the shores of the Mediterranean, the Hesperis maritima of Linnæus; also, by some commentators, with the Campanula Medium of Linnæus.

[4] So called, according to Pintianus and Salmasius, from Calatia, a town of Italy. Fée adopts the reading "Calathiana," and considers it to have received that name from its resemblance to the Caltha mentioned in the next Chapter. Dalechamps identifies it with the Digitalis purpurea; Gessner, Dodonæus, and Thalius, with the Gentiana pneumonanthe, others with the Gentiana ciliata and Pannonica, and Sprengel with the Gentiana verna of Linnæus. Fée admits himself totally at a loss on the subject.

[5] "Concolori amplitudine." Gronovius, with considerable justice, expresses himself at a loss as to the exact meaning of these words. If Sprengel and Salmasius are right in their conjectures that the Caltha of Pliny and Virgil is the marigold, our Calendula officinalis, the passage cannot mean that the flower of it is of the same size and colour with any variety of the violet mentioned in the preceding Chapter. From the description given of it by Dioscorides, it is more than probable that the Caltha of the ancients is not the marigold, and Hardouin is probably right in his conjecture that Pliny intends to describe a variety of the violet under the name. Fée is at a loss as to its identification.

[6] Or "royal broom." Sprengel thinks that this is the Chenopodium scoparia, a plant common in Greece and Italy; and Fée is inclined to coincide with that opinion, though, as he says, there are numerous other plants with odoriferous leaves and pliant shoots, as its name, broom, would seem to imply. Other writers would identify it with a Sideritis, and others, again, with an Achillæa.

[7] See B. xii. c. 26. Fée is inclined to coincide with Ruellius, and to identify this with the Digitalis purpurea, clown's spikenard, or our Lady's

is odoriferous in the root only. In former times, it was the practice to make unguents of this root, as we learn from the poet Aristophanes, a writer of the Ancient Comedy; from which circumstance some persons have erroneously given the name of "exotic"[8] to the plant. The smell of it strongly resembles that of cinnamomum; and the plant grows in thin soils, which are free from all humidity.

The name of "combretum"[9] is given to a plant that bears a very strong resemblance to it, the leaves of which taper to the fineness of threads; in height, however, it is taller than the bacchar. These are the only[10] * * * * * The error, however, ought to be corrected, on the part of those who have bestowed upon the bacchar the name of "field nard;" for that in reality is the surname given to another plant, known to the Greeks as "asaron," the description and features of which we have already[11] mentioned, when speaking of the different varieties of nard. I find, too, that the name of "asaron" has been given to this plant, from the circumstance of its never[12] being employed in the composition of chaplets.

CHAP. 17.—SAFFRON: IN WHAT PLACES IT GROWS BEST. WHAT FLOWERS WERE KNOWN AT THE TIME OF THE TROJAN WAR.

The wild saffron[13] is the best; indeed, in Italy it is of no

gloves. The only strong objection to this is the fact that the root of the digitalis has a very faint but disagreeable smell, and not at all like that of cinnamon. But then, as Fee says, we have no positive proof that the "cinnamomum" of the ancients is identical with our cinnamon. See Vol. iii. p. 138. Sprengel takes the "bacchar" of Virgil to be the Valeriana Celtica, and the "baccharis" of the Greeks to be the Gnaphalium sanguineum, a plant of Egypt and Palestine. The bacchar has been also identified with the Asperula odorata of Linnæus, the Geum urbanum of Linnæus (the root of which has the smell of cloves), the Inula Vaillantii, the Salvia Sclarea, and many other plants.

[8] "Barbaricam." Everything that was not indigenous to the territory of Rome, was "barbarum," or "barbaricum."

[9] Cæsalpinus says that this is a rushy plant, called, in Tuscany, Herba luziola; but Fée is quite at a loss for its identification.

[10] Sillig is most probably right in his surmise that there is an hiatus here.

[11] In B. xii. c. 27. Asarum Europæum, or foal-foot.

[12] Probably meaning that it comes from ἀ, "not," and σαίρω, "to adorn."

[13] Or Crocus, the Crocus sativus of Linnæus, from the prepared stigmata of which the saffron of commerce is made. It is still found growing wild on the mountains in the vicinity of Athens, and is extensively cultivated in many parts of Europe.

use whatever to attempt to propagate it, the produce of a whole bed of saffron being boiled down to a single scruple; it is reproduced by offsets from the bulb. The cultivated saffron is larger, finer, and better looking than the other kinds, but has much less efficacy. This plant is everywhere degenerating,[14] and is far from prolific at Cyrenæ even, a place where the flowers are always of the very finest quality. The most esteemed saffron, however, is that of Cilicia, and there of Mount Corycus in particular; next comes the saffron of Mount Olympus, in Lycia, and then of Centuripa, in Sicily; some persons, however, have given the second rank to the Phlegræan[15] saffron.

There is nothing so much adulterated[16] as saffron: the best proof of its goodness is when it snaps under pressure by the fingers, as though it were friable;[17] for when it is moist, a state which it owes to being adulterated, it is limp, and will not snap asunder. Another way of testing it, again, is to apply it with the hand to the face, upon which, if good, it will be found to be slightly caustic to the face and eyes. There is a peculiar kind, too, of cultivated saffron, which is in general extremely mild, being only of middling[18] quality; the name given to it is "dialeucon."[19] The saffron of Cyrenaica, again, is faulty in the opposite extreme; for it is darker than any other kind, and is apt to spoil very quickly. The best saffron everywhere is that which is of the most unctuous quality, and the filaments of which are the shortest; the worst being that which emits a musty smell.

Mucianus informs us that in Lycia, at the end of seven or eight years, the saffron is transplanted into a piece of ground which has been prepared for the purpose, and that in this way

[14] "Degenerans ubique." Judging from what he states below, he may possibly mean, if grown repeatedly on the same soil.

[15] He may allude either to the city of Phlegra of Macedonia, or to the Phlegræan Plains in Campania, which were remarkable for their fertility. Virgil speaks of the saffron of Mount Tmolus in Cilicia.

[16] It is very extensively adulterated with the petals of the marigold, as also the Carthamus tinctorius, safflower, or bastard saffron.

[17] This is the case; for when it is brittle it shows that it has not been adulterated with water, to add to its weight.

[18] Perhaps the reading here, "Cum sit in medio candidum," is preferable; "because it is white in the middle."

[19] "White throughout."

it is prevented from degenerating. It is never[20] used for chaplets, being a plant with an extremely narrow leaf, as fine almost as a hair; but it combines remarkably well with wine, sweet wine in particular. Reduced to a powder, it is used to perfume[21] the theatres.

Saffron blossoms about the setting of the Vergiliæ, for a few days[22] only, the leaf expelling the flower. It is verdant[23] at the time of the winter solstice, and then it is that they gather it; it is usually dried in the shade, and if in winter, all the better. The root of this plant is fleshy, and more long-lived[24] than that of the other bulbous plants. It loves to be beaten and trodden[25] under foot, and in fact, the worse it is treated the better it thrives: hence it is, that it grows so vigorously by the side of foot-paths and fountains. (7.) Saffron was already held in high esteem in the time of the Trojan War; at all events, Homer,[26] we find, makes mention of these three flowers, the lotus,[27] the saffron, and the hyacinth.

CHAP. 18.—THE NATURE OF ODOURS.

All the odoriferous[28] substances, and consequently the plants, differ from one another in their colour, smell, and juices. It is but rarely[29] that the taste of an odoriferous substance is not

[20] He contradicts himself here; for in c. 79 of this Book, he says that chaplets of saffron are good for dispelling the fumes of wine.

[21] "Ad theatra replenda." It was the custom to discharge saffron-water over the theatres with pipes, and sometimes the saffron was mixed with wine for the purpose. It was discharged through pipes of very minute bore, so that it fell upon the spectators in the form of the finest dust. See Lucretius, B. ii. l. 416; Lucan, Phars. ix. l. 808—810; and Seneca, Epist. 92.

[22] It flowers so rapidly, in fact, that it is difficult to avoid the loss of a part of the harvest.

[23] The whole of this passage is from Theophrastus, De Odorib.

[24] This statement, though borrowed from Theophrastus, is not consistent with fact. The root of saffron is not more long-lived than any other bulbs of the Liliaceæ.

[25] Because, Dalechamps says, all the juices are thereby thrown back into the root, which consequently bears a stronger flower the next year.

[26] Il. xiv. l. 348. [27] See B. xiii. c. 32.

[28] All these statements as to the odours of various substances, are from Theophrastus, De Causis, B. vi. c. 22.

[29] He does *not* say, however, that it is but rarely that a bitter substance is not odoriferous; a sense in which Fée seems to have understood him, as he says, "This assertion is not true in general, and there are numerous

bitter; while sweet substances, on the other hand, are but rarely odoriferous. Thus it is, too, that wine is more odoriferous than must, and all the wild plants more so than the cultivated ones.[30] Some flowers have a sweet smell at a distance, the edge of which is taken off when they come nearer; such is the case with the violet, for instance. The rose, when fresh gathered, has a more powerful smell at a distance, and dried,[31] when brought nearer. All plants have a more penetrating odour, also, in spring[32] and in the morning; as the hour of midday approaches, the scent becomes gradually weakened.[33] The flowers, too, of young plants are less odoriferous than those of old ones; but it is at mid-age[34] that the odour is most penetrating in them all.

The rose and the crocus[35] have a more powerful smell when gathered in fine weather, and all plants are more powerfully scented in hot climates than in cold ones. In Egypt, however, the flowers are far from odoriferous, owing to the dews and exhalations with which the air is charged, in consequence of the extended surface of the river. Some plants have an agreeable, though at the same time extremely powerful smell; some, again, while green, have no[36] smell at all, owing to the excess of moisture, the buceros for example, which is the same as

exceptions; for instance, quassia wood, which is inodorous and yet intensely bitter." The essential oil, he remarks, elaborated in the tissue of the corolla, is the ordinary source of the emanations of the flower.

[30] Fée remarks that cultivation gives to plants a softer and more aqueous consistency, which is consequently injurious to the developement of the essential oil.

[31] Theophrastus, from whom this is borrowed, might have said with more justice, Fée remarks, that certain roses have more odour when dried than when fresh gathered. Such is the case, he says, with the Provence rose. Fresh roses, however, have a more pronounced smell, the nearer they are to the olfactory organs.

[32] This is by no means invariably the case: in fact, the smell of most odoriferous plants is most powerful in summer.

[33] Because the essential oils evaporate more rapidly.

[34] With Littré, we adopt the reading "ætate," "mid-age," and not "æstate," "midsummer," for although the assertion would be in general correct, Pliny would contradict the statement just made, that all plants have a more penetrating odour in spring. This reading is supported also by the text of Theophrastus.

[35] Or saffron.

[36] This is a just observation, but the instances might be greatly extended, as Fée says.

fenugreek.[37] Not all flowers which have a penetrating odour are destitute of juices, the violet, the rose, and the crocus, for example; those, on the other hand, which have a penetrating odour, but are destitute of juices, have all of them a very powerful smell, as we find the case with the two varieties[38] of the lily. The abrotonum[39] and the amaracus[40] have a pungent smell. In some plants, it is the flower only that is sweet, the other parts being inodorous, the violet and the rose, for example.

Among the garden plants, the most odoriferous are the dry ones, such as rue, mint, and parsley, as also those which grow on dry soils. Some fruits become more odoriferous the older they are, the quince, for example, which has also a stronger smell when gathered than while upon the tree. Some plants, again, have no smell but when broken asunder, or when bruised, and others only when they are stripped of their bark. Certain vegetable substances, too, only give out a smell when subjected to the action of fire, such as frankincense and myrrh, for example. All flowers are more bitter to the taste when bruised than when left untouched.[41] Some plants preserve their smell a longer time when dried, the melilote, for example; others, again, make the place itself more odoriferous where they grow, the iris[42] for instance, which will even render the whole of a tree odoriferous, the roots of which it may happen to have touched. The hesperis[43] has a more powerful odour at night, a property to which it owes its name.

Among the animals, we find none that are odoriferous, unless, indeed, we are inclined to put faith in what has been said about the panther.[44]

[37] See B. xviii. c. 39.

[38] The white lily and the red lily. See c. 11 of this Book.

[39] As to the Abrotonum, see B. xiii. c. 2, and c. 34 of this Book.

[40] See c. 35 of this Book.

[41] Or in other words, the interior of the petals has a more bitter flavour than that of the exterior surface.

[42] Pliny makes a mistake here, in copying from Theophrastus, De Causis, B. vi. c. 25. That author is speaking not of the flower, but of the rainbow, under the name of "iris." Pliny has himself made a similar statement as to the rainbow, in B. xii. c. 52, which he would appear here to have forgotten.

[43] The Cheiranthus tristis of Linnæus, or sad gilliflower, Fée thinks.

[44] See B. viii. c. 23. Pliny did not know of the existence of the musk-deer, the Muschus moschiferus of Eastern Asia: and he seems not to have thought of the civet, (if, indeed, it was known to him) the fox, the weasel,

CHAP. 19.—THE IRIS.

There is still another distinction, which ought not to be omitted,—the fact, that many of the odoriferous plants never[45] enter into the composition of garlands, the iris[46] and the salisunca, for example, although, both of them, of a most exquisite odour. In the iris, it is the root[47] only that is held in esteem, it being extensively employed in perfumery and medicine. The iris of the finest quality is that found in Illyricum,[48] and in that country, even, not in the maritime parts of it, but in the forests on the banks of the river Drilon[49] and near Narona. The next best is that of Macedonia,[50] the plant being extremely elongated, white, and thin. The iris of Africa[51] occupies the third rank, being the largest of them all, and of an extremely bitter taste.

The iris of Illyricum comprehends two varieties—one of which is the raphanitis, so called from its resemblance to the radish,[52] of a somewhat red colour, and superior[53] in quality to the other, which is known as the "rhizotomus." The best kind of iris is that which produces sneezing[54] when handled. The stem of this plant is a cubit in length, and erect, the flower being of various colours, like the rainbow, to which circumstance it is indebted for its name. The iris, too, of Pisidia[55] is far from being held in disesteem. Persons[56] who intend taking

and the polecat, the exhalations from which have a peculiar smell. The same, too, with the urine of the panther and other animals of the genus Felis.

[45] For some superstitious reason, in all probability. Pliny mentions below, the formalities with which this plant ought to be gathered.

[46] See B. xiii. c. 2. The ancient type of this plant, our iris, sword-lily, or flower-de-luce, was probably the Iris Florentina or Florentine iris of modern botany.

[47] At the present day, too, it is the root of the plant that is the most important part of it.

[48] The Iris Florentina, probably, of Linnæus.

[49] Mentioned by Nicander, Theriaca, l. 43.

[50] Probably a variety only of the preceding kind.

[51] The most common varieties in Africa are the Iris alata of Lamarck, I. Mauritanica of Clusius, I. juncea, and I. stylosa of Desfontaines.

[52] "Raphanus." C. Bauhin identifies the Rhaphanitis with the Iris biflora, and the Rhizotomus with the Iris angustifolia prunum redolens.

[53] See c. 38 of this Book.

[54] No kind of iris, Fée says, fresh or dried, whole or powdered, is productive of this effect.

[55] Very similar, probably, to that of Illyria.

[56] All these superstitions are from Theophrastus, Hist. Plant. B. ix. c. 9.

up the iris, drench the ground about it some three months before with hydromel, as though a sort of atonement offered to appease the earth; with the point of a sword, too, they trace three circles round it, and the moment they gather it, they lift it up towards the heavens.

The iris is a plant of a caustic nature, and when handled, it causes blisters like burns to rise. It is a point particularly recommended, that those who gather it should be in a state of chastity. The root, not only when dried,[57] but while still in the ground, is very quickly attacked by worms. In former times, it was Leucas and Elis that supplied us with the best oil[58] of iris, for there it has long been cultivated; at the present day, however, the best comes from Pamphylia, though that of Cilicia and the northern climates is held in high esteem.

CHAP. 20.—THE SALIUNCA.

The saliunca[59] has a rather short leaf, which does not admit of its being plaited for garlands, and numerous roots, by which it is held together; being more of a herb than a flower, and so closely matted and tangled that it would almost appear to have been pressed together with the hand—in short, it is a turf[60] of a peculiar nature. This plant grows in Pannonia and the sunny regions of Noricum and the Alps, as also the vicinity of the city of Eporedia;[61] the smell being so remarkably sweet that the crops of it have been of late quite as profitable as the working of a mine. This plant is particularly valued for the pleasant smell it imparts to clothes among which it is kept.

CHAP. 21.—THE POLIUM, OR TEUTHRION.

It is the same, too, with the polium,[62] a herb employed for a similar purpose among the Greeks, and highly extolled by Musæus and Hesiod, who assert that it is useful for every purpose, and more particularly for the acquisition of fame and honour;[63] indeed, it is a truly marvellous production, if it is

[57] This, Fée says, is quite consistent with modern experience.

[58] "Irinum." See B. xiii. c. 2.

[59] Probably the Valeriana Celtica of Linnæus. See B. xii. c. 27, where it is mentioned as Gallic nard.

[60] "Cæspes."

[61] See B. iii. c. 21.

[62] Probably the Teucrium polium of Linnæus; the herb poley, or poley-mountain.

[63] By those who carry it on their person.

the fact, as they state, that its leaves are white in the morning, purple at midday, and azure[63*] at sunset. There are two varieties of it, the field polium, which is larger, and the wild,[64] which is more diminutive. Some persons give it the name of "teuthrion."[65] The leaves resemble the white hairs of a human being; they take their rise immediately from the root, and never exceed a palm in height.

CHAP. 22. (8.)—FABRICS WHICH RIVAL THE COLOURS OF FLOWERS.

We have now said enough on the subject of the odoriferous flowers; in relation to which, luxury not only glories in having vanquished Nature in the composition of unguents, but has even gone so far as to challenge, in her fabrics, those flowers which are more particularly recommended by the beauty of their tints. I remark that the following are the three principal[66] colours; the red, that of the kermes[67] for instance, which, beginning in the tints of the rose, reflects, when viewed[68] sideways and held up to the light, the shades that are found in the Tyrian purple,[69] and the colours of the dibapha[70] and Laconian cloths: the amethystine colour, which is borrowed from the violet, and to which, bordering as it does on the purple, we have given the name of "ianthinum"[71]—it must, however, be remembered, that we here give a general name to a colour which is subdivided into numerous tints—and a third, properly known as the "conchyliated" colour, but which comprehends

63* This marvel is related by Dioscorides in reference to the Tripolium, and not the Polium.

64 The Teucrium montanum, probably, of Linnæus.

65 This name belongs, properly, to the wild or mountain Polium.

66 "Principales." The meaning of this term is explained at the end of this Chapter. Red, yellow, and blue—or else, red, green, and violet, are probably the *primary* colours of light.

67 See B. ix. c. 65, and B. xvi. c. 12. He alludes to the Coccus ilicis of Linnæus.

68 See B. xxxvii. c. 40, as to the meaning of the word "Suspectus." This passage, however, as Sillig remarks, is hopelessly corrupt.

69 See B. ix. cc. 60, 63.

70 "Doubly-dyed," or "twice dipped," in purple. See B. ix. c. 63. Littré remarks here that, according to Doctor Bizio, it was the Murex brandaris that produced the Tyrian purple, and the Murex trunculus the amethystine purple.

71 Or "violet-colour." See B. xxxvii. c. 40.

72 For further information on these tints, see B. ix. cc. 64, 65.

a variety of shades, such, for instance, as the tints of the heliotropium, and others of a deeper colour, the hues of the mallow, inclining to a full purple, and the colours of the late[73] violet; this last being the most vivid, in fact, of all the conchyliated tints. The rival colours being now set side by side, Nature and luxury may enter the lists, to vie for the mastery.

I find it stated that, in the most ancient times, yellow was held in the highest esteem, but was reserved exclusively for the nuptial veils[74] of females; for which reason it is perhaps that we do not find it included among the principal colours, those being used in common by males and females: indeed, it is the circumstance of their being used by both sexes in common that gives them their rank as principal colours.

CHAP. 23.—THE AMARANTH.

There is no doubt that all the efforts of art are surpassed by the amaranth,[75] which is, to speak correctly, rather a purple ear[76] than a flower, and, at the same time, quite inodorous. It is a marvellous feature in this plant, that it takes a delight in being gathered; indeed, the more it is plucked, the better it grows. It comes into flower in the month of August, and lasts throughout the autumn. The finest of all is the amaranth of Alexandria, which is generally gathered for keeping; for it is a really marvellous[77] fact, that when all the other flowers have gone out, the amaranth, upon being dipped in water, comes to life again: it is used also for making winter chaplets. The peculiar quality of the amaranth is sufficiently indicated by its name, it having been so called from the circumstance that it never fades.[78]

[73] Belonging, probably, Fée thinks, to the Cruciferæ of the genera Hesperis and Cheiranthus.

[74] "Flammeis" The "flammeum," or flame-coloured veil of the bride, was of a bright yellow, or rather orange-colour, perhaps.

[75] The Celosia cristata of Linnæus.

[76] "Spica." The moderns have been enabled to equal the velvety appearance of the amaranth in the tints imparted by them to their velvets. The Italians call it the "velvet-flower."

[77] The real fact is, that the amaranth, being naturally a dry flower, and having little humidity to lose, keeps better than most others.

[78] From the Greek ἀ, "not," and μαράινεσθαι, "to fade."

CHAP. 24.—THE CYANOS: THE HOLOCHRYSOS.

The name,[79] too, of the cyanos[80] indicates its colour, and so does that of the holochrysos.[81] None of these flowers were in use in the time of Alexander the Great, for the authors, we find, who flourished at a period immediately after his decease, have made not the slightest mention of them; from which circumstance it is very clear that they only came into fashion at a later period. Still, however, who can entertain any doubt that they were first introduced by the Greeks, from the fact that Italy has only their Greek names by which to designate them?

CHAP. 25.—THE PETILIUM: THE BELLIO.

But, by Hercules! it is Italy herself that has given its name to the petilium,[82] an autumnal flower, which springs up in the vicinity of thorny brakes, and recommends itself solely by its colour, which is that of the wild rose. The petals of it are small, and five in number; and it is a remarkable circumstance in this plant, that the head of it droops at first, and it is only after it becomes erect that the petals make their appearance, forming a small corolla of various colours, enclosing a yellow seed.

The bellio,[83] too, is a yellow flower, formed of[84] fifty-five filaments circularly arranged, in the shape of a chaplet. These are, both of them, meadow flowers, which are mostly of no use whatever, and consequently without names: even the flowers just mentioned are known sometimes by one name, and sometimes by another.

79 Being the Greek for "blue" or "azure."

80 The Centaurea cyanus of Linnæus; our blue-bell.

81 Meaning "all gold." It has been identified with the Gnaphalium stœchas of Linnæus, the *immortelle* of the French, which forms the ingredient for their funereal chaplets.

82 Sprengel says that this is the Geum rivale of Linnæus; but then the Geum is a spring, and not an autumn flower, its blossoms bear no resemblance to those of the eglantine, and its seeds are not yellow.

83 Generally supposed to be the Chrysanthemum segetum, or golden daisy.

84 "Pastillicantibus quinquagenis quinis barbulis coronatur." Pliny is unusually verbose here.

CHAP. 26.—THE CHRYSOCOME, OR CHRYSITIS.

The chrysocome,[85] or chrysitis, has no Latin appellation: it is a palm in height, the flowers forming clusters of a golden colour. The root of it is black, and it has a taste both rough and sweet: it is found growing in stony and umbrageous spots.

CHAP. 27. (9.)—SHRUBS, THE BLOSSOMS OF WHICH ARE USED FOR CHAPLETS.

Having thus passed in review nearly all the best-known colours, we must now give our attention to the chaplets which are pleasing merely on account of the variety of their materials. Of such chaplets there are two kinds, one composed of flowers, the other of leaves. The flowers so employed, I may say, are those of broom[86]—the yellow blossom gathered from it—the rhododendron,[87] and the jujube,[88] also known as the tree of Cappadocia, which bears an odoriferous flower similar to that of the olive. Among the brambles, too, we find the cyclaminum growing, of which we shall have to speak more at length on a future occasion:[89] its flower, which reflects the hues of the purple of Colossæ,[90] is used as an ingredient in chaplets.

CHAP. 28.—SHRUBS, THE LEAVES OF WHICH ARE USED FOR CHAPLETS.

The leaves, also, of smilax and ivy are employed in chaplets; indeed, the clusters of these plants are held in the very highest esteem for this purpose: we have already[91] spoken of them at sufficient length when treating of the shrubs. There are also other kinds of shrubs, which can only be indicated by their

[85] "Golden locks," or "gold plant;" probably the Chrysocoma linosyris of Linnæus; though the name appears to have been given to numerous plants.

[86] See B. xvi. c. 69, B. xviii. c. 65, B. xix. c. 2, B. xxiv. c. 40; also c. 42 of the present Book.

[87] The Nerium oleander of Linnæus. See B. xvi. c. 33, and B. xxiv. cc. 47, 49.

[88] As to the Zizyphum, or jujube, see B. xv. c. 14. The flower, as Pliny says, is not unlike that of the olive; but Fée remarks, that it may at the present day as justly be called the tree of Provence or of Italy, as in ancient times "the tree of Cappadocia."

[89] B. xxv. c. 67.

[90] See B. v. c. 41.

[91] See B. xvi. cc. 62 and 63, and B. xxiv. cc. 47 and 49.

Greek names, little attention having been paid by the framers of our language to this branch of nomenclature. Most of them grow in foreign countries, it is true; but still, it is our duty to make some mention of them, as it is of Nature in general that we are speaking, and not of Italy in particular.

CHAP. 29.—THE MELOTHRON, SPIRÆA, AND ORIGANUM. THE CNEORUM OR CASSIA; TWO VARIETIES OF IT. THE MELISSOPHYLLUM OR MELITTÆNA. THE MELILOTE, OTHERWISE KNOWN AS CAMPANIAN GARLAND.

Thus it is, that we find employed for chaplets, the leaves of the melothron,[92] spiræa,[93] origanum,[94] cneorum,[95] by Hyginus called "cassia," conyza or cunilago,[96] melissophyllon or apiastrum,[97] and melilote, known to us by the name of "Campanian[98] garland," the best kind of melilote[99] in Italy being that of Campania, in Greece that of Cape Sunium, and next to that the produce of Chalcidice and Crete: but wherever this plant grows it is only to be found in rugged and wild localities. The name "sertula" or "garland," which it bears, sufficiently proves that this plant was formerly much used in the composition of chaplets. The smell, as well as the flower, closely resembles that of saffron, though the stem itself is white; the shorter and more fleshy the leaves, the more highly it is esteemed.

CHAP. 30.—THREE VARIETIES OF TREFOIL: THE MYOPHONUM.

The leaves of trefoil also are employed for making chaplets. There are three varieties: the first being called by the Greeks sometimes "minyanthes,"[1] and sometimes "asphaltion;" the leaves of it, which the garland-makers employ, are larger than those of the other kinds. The second variety, known as

[92] Or Vitis alba, "white vine," the Bryonia dioica of modern botany. See B. xxiii. c. 16.

[93] The Spiræa salicifolia of Linnæus, or meadowsweet.

[94] See B. xx. c. 67, and c. 30 of this Book.

[95] The Daphne Cnidium of Linnæus. See B. xxiii. c. 35; also B. xii. c. 43. It is altogether different from the Laurus cassia, or genuine cassia.

[96] See B. xx. c. 63.

[97] See B. xx. c. 45.

[98] "Sertula Campana."

[99] Most probably, Fée thinks, the Trifolium Melilotus officinalis, a clover, or trefoil.

[1] The Psoranthea bituminosa of Linnæus. It is found on declivities near the sea-coast, in the south of Europe.

the "oxytriphyllon,"[2] has a pointed leaf; and the third has the smallest leaf of them all. Among these plants there are some which have a tough, sinewy stem, such as marathron,[3] for instance, hippomarathron,[4] and the myophonum.[5] The umbels, too, of fennel-giant and the purple flowers[6] of the ivy are employed for this purpose; as also another kind of ivy very similar to the wild rose,[7] the colour only of which is attractive, the flower being quite inodorous. There are also two[8] varieties used of the cneorum, the black and the white, this last being odoriferous: they are both of them provided with branches, and they blossom after the autumnal equinox.[9]

(10.) There are the same number of varieties, also, of origanum employed in making chaplets, one of which is destitute of seed, the other, which is also odoriferous, being known as the Cretan[10] origanum.

CHAP. 31.—TWO VARIETIES OF THYME. PLANTS PRODUCED FROM BLOSSOMS AND NOT FROM SEED.

There are also as many varieties of thyme[11] employed, the one white, the other dark:[12] it flowers about the summer solstice, when the bees cull from it. From this plant a sort of augury is derived, as to how the honey is likely to turn out:

[2] "Pointed trefoil." Pliny has probably committed an error here, as Dioscorides makes oxyphyllum, minyanthes, and asphaltium to be different names of the same variety. Sprengel, however, identifies this pointed trefoil with the Trifolium Italicum of Linnæus.

[3] The Anethum fæniculum of Linnæus. See B. viii. c. 41, B. xx. c. 95, and B. xxx. c. 9.

[4] See B. xx. c. 96.

[5] The "mouse-killer." Probably the Aconitum napellus of Linnæus. See B. xxvii. c. 2.

[6] See B. xvi. c. 62.

[7] Fée remarks, that there is no such ivy in existence; he agrees with Dalechamps in the opinion that Pliny has confounded κίσσος, "ivy," with κίστος, the "rock-rose. See B. xvi. c. 62.

[8] The Daphne Cnidium and the Daphne Cneorum of Linnæus. See B. xxiii. c. 35, and B. xv. c. 7.

[9] In reality, they blossom in April and May, and mostly a second time in autumn as well, the Daphne Cneorum in particular.

[10] See B. xx. c. 69.

[11] Under the head "Thymus," Fée thinks that both the Satureia capitata of Linnæus, headed savory, and the Thymus vulgaris, and Thymus zygis of Linnæus (varieties of thyme), should be included.

[12] Fée thinks that in the expression "nigricans," he may allude to the deep red of the stalk of some kinds of thyme, more particularly at the end of summer. It is the Thymus zigis that has a white, downy stem.

for the bee-keepers have reason to look for a large crop when the thyme blossoms in considerable abundance. Thyme receives great injury from showers of rain, and is very apt to shed its blossom. The seed of thyme is so minute[13] as to be imperceptible, and yet that of origanum, which is also extremely minute, does not escape the sight. But what matters it that Nature has thus concealed it from our view? For we have reason to conclude that it exists in the flower itself; which, when sown in the ground, gives birth to the plant —what is there, in fact, that the industry of man has left untried?

The honey of Attica is generally looked upon as the best in all the world; for which reason it is that the thyme of that country has been transplanted, being reproduced, as already stated, with the greatest difficulty, from the blossom. But there is also another peculiarity in the nature of the thyme of Attica, which has greatly tended to frustrate these attempts— it will never live except in the vicinity of breezes from the sea. In former times, it was the general belief that this is the case with all kinds of thyme, and that this is the reason why it does not grow in Arcadia:[14] at a period when it was universally supposed, too, that the olive never grows beyond three hundred stadia[15] from the sea. But, at the present day, we know for certain that in the province of Gallia Narbonensis the Stony Plains[16] are quite overgrown with thyme; this being, in fact, the only source of revenue to those parts, thousands of sheep[17] being brought thither from distant countries to browse upon the plant.

CHAP. 32.—CONYZA.

There are two varieties of conyza, also, employed in making

[13] From Theophrastus, Hist. Plant. B. vi. c. 2, and De Causis, B. i. c. 5. Fée suggests, that the seed, lying at the bottom of the calyx, may have escaped notice, and that in reality, when the ancients imagined they were sowing the blossoms, they were putting the seed in the earth. That, in fact, seems to agree with the view which Pliny takes of the matter.

[14] Which lies in the interior of the Peloponnesus.

[15] See B. xv. c. 1.

[16] "Lapidei Campi." See B. iii. c. 5.

[17] Similar to our practice of depasturing sheep on Dartmoor and other favourite moors and downs.

chaplets, the male[18] plant and the female. The difference consists in the leaves, those of the female plant being thinner, more tapering, and narrower, and those of the male being of an imbricated shape, the plant having a greater number of branches. The blossom, too, of the male plant is more vivid than that of the female: in both kinds it is late in making its appearance, not till after the rising of Arcturus.

The smell of the male conyza is more powerful than that of the female plant: the latter, however, is of a more penetrating nature, for which reason it is that the female plant is held in higher esteem for the treatment of the bites of animals. The leaves of the female plant have exactly the smell of honey; and the root of the male has received the name of "libanotis" from some: we have already made mention[19] of it on a previous occasion.

CHAP. 33.—THE FLOWER OF JOVE. THE HEMEROCALLES. THE HELENIUM. THE PHLOX. PLANTS IN WHICH THE BRANCHES AND ROOTS ARE ODORIFEROUS.

Of the following plants, too, it is only the leaves that are employed for chaplets—the flower of Jove,[20] the amaracus, the hemerocalles,[21] the abrotonum, the helenium,[22] sisymbrium,[23] and wild thyme, all of them ligneous plants, growing in a manner similar to the rose. The flower of Jove is pleasing only for its colours, being quite inodorous; which is the case also with the plant known by the Greek name of "phlox."[24] All the plants, too, which we have just mentioned are odoriferous, both in the branches and the leaves, with the sole exception of wild thyme.[25] The helenium is said to have

[18] Fée takes this to be the Inula viscosa of Desfontaines, and identifies the other kind with the Inula pulicaria of Linnæus. See B. xx. cc. 63, 64.

[19] B. xx. c. 64.

[20] Supposed to be the same as the Agrostemma coronaria of Linnæus.

[21] Sprengel identifies it with the Pancratium maritimum of Linnæus. As described by Dioscorides, however, Fée takes it to be the Lilium Martagon, or Turk's-cap lily. See c. 90 of this Book.

[22] This is different from the Helenium of the Greeks, the Inula Helenium of Linnæus, mentioned in B. xv. c. 7. Sprengel identifies it with the Teucrium Creticum of Linnæus, the Cretan germander.

[23] See B. xx. c. 91.

[24] "Flame." Sprengel identifies it with the Agrostemma coronaria of Linnæus, making the flower of Jove to be the Agrostemma flos Jovis.

[25] Fée remarks, that if this is our Thymus serpyllum, this exception is inexact.

had its origin in the tears of Helen, and hence it is that the kind grown in the island of Helena[26] is so highly esteemed. It is a shrub which throws out its tiny branches along the ground, some nine inches in length, with a leaf very similar to that of wild thyme.

CHAP. 34.—THE ABROTONUM. THE ADONIUM: TWO VARIETIES OF IT. PLANTS WHICH REPRODUCE THEMSELVES. THE LEUCANTHEMUM.

The flower of the abrotonum,[27] which makes its appearance in summer, has a powerful but agreeable smell; it is of a bright golden colour. Left to range at large, it reproduces itself by layers from the tops of the branches: but when it is propagated by the hand of man, it is better to grow it from the seed than from the roots or slips, though even from the seed it is not grown without considerable trouble. The young plants are transplanted in summer, which is the case also with the adonium.[28] They are both of them plants of a very chilly nature, though, at the same time, they are apt to receive injury if too much exposed to the sun: when, however, they have gained sufficient strength, they throw out branches like those of rue.

The leucanthemum[29] has a similar smell to that of the abrotonum: it is a foliated plant, with a white flower.

CHAP. 35. (11.)—TWO VARIETIES OF THE AMARACUS.

Diocles, the physician, and the people of Sicily have given the name of "amaracus" to the plant known in Egypt and Syria as sampsuchum.[30] It is reproduced two ways, from

[26] For two islands of this name, see B. iv. c. 20, and c. 23.

[27] The female Abrotonum is identified with the Santolina chamæcyparissus of Linnæus: the little-cypress Santoline. The male is the Artemisia abrotonum of Linnæus, our southern-wood.

[28] Pliny has probably committed an error here in transcribing from Theophrastus, Hist. Plant. B. vi. c. 7, who, when speaking of the abrotonum, says, "It is transplanted in earthen pots, in the way employed for the gardens of Adonis," these gardens being moveable parterres, laid out in pots or vases. We cannot agree with Hardouin, who looks upon the Adonium as a variety of the Abrotonum, and censures Salmasius for accusing Pliny of committing an error here.

[29] The "White flower." See B. xxii. c. 26.

[30] See B. xiii. c. 2. The sampsuchum, or amaracus, is generally thought to be the sweet marjoram, or Origanum marjorana of Linnæus. But Fée identifies it with the Origanum majoranoides of Willdenow, our organy, wild or false marjoram.

seed and from cuttings, being more long-lived than the preceding plants, and possessed of a more agreeable smell. The amaracus, like the abrotonum, has a great abundance of seed, but while the abrotonum has a single root, which penetrates deep into the ground, those of the other plant adhere but lightly to the surface of the earth. Those of the other plants which love the shade, water, and manure, are generally set at the beginning of autumn, and even, in some localities, in spring.

CHAP. 36.—THE NYCTEGRETON, CHENOMYCHE, OR NYCTALOPS.

Democritus has regarded the nyctegreton[31] as one of the most singular of plants. According to that author, it is of a dark red colour, has leaves like those of a thorn, and creeps upon the ground. He says that it grows in Gedrosia[32] more particularly, and that it is taken up by the roots immediately after the vernal equinox, and dried in the moonlight for thirty days; after which preparation it emits light by night. He states also, that the Magi and the kings of Parthia employ this plant in their ceremonies when they make a vow to perform an undertaking; that another name given to it is "chenomyche,"[33] from the circumstance that, at the very sight of it, geese will manifest the greatest alarm; and that by some persons, again, it is known as the "nyctalops,"[34] from the light which it emits at a considerable distance by night.

CHAP. 37.—WHERE THE MELILOTE IS FOUND.

The melilote[35] is found growing everywhere, though that of Attica is held in the highest esteem. In all countries, however, it is preferred when fresh gathered; that too, the colour of which is not white, but approaches as nearly as possible to

[31] The "night-watcher." According to Sprengel, this is the Cæsalpina pulcherrima of Linnæus. But, as Fée says, that is entirely an Indian plant, and has only been introduced but very recently into Europe. Hardouin identifies it with a plant called "lunaria" by the naturalists of his day, which shines, he says, with the moon at night.

[32] The Cæsalpina pulcherrima is not to be found in or near Gedrosia (in ancient Persia), but solely on the shores of the Bay of Bengal.

[33] From χῆνες, "geese," and μύχος, a "corner;" because geese run into a corner on seeing it.

[34] As to the meaning of this word, see B. xxviii. c. 47.

[35] See c. 29 of this Book.

the colour of saffron. In Italy, however, it is the white kind that is the most odoriferous.

CHAP. 38.—THE SUCCESSION IN WHICH FLOWERS BLOSSOM: THE SPRING FLOWERS. THE VIOLET. THE CHAPLET ANEMONE. THE ŒNANTHE. THE MELANION. THE HELICHRYSOS. THE GLADIOLUS. THE HYACINTH.

The first of the flowers that announce the approach of spring is the white[36] violet; indeed, in warm localities, it is seen peeping out in the winter even. Next to it comes the violet known as the ion, and the purple violet; then the flame-coloured flower, the name of which is phlox,[37] but only the wild one. The cyclaminum[38] blossoms twice a year, in spring and autumn, standing equally in awe as it does of summer and of winter. The narcissus and the lily, in the parts beyond sea, are a little later than the preceding plants: but in Italy, as we have already[39] stated, they are in blossom with the rose. In Greece, too, the anemone[40] blooms even later; it is the flower of a wild bulb, and is altogether different from the one[41] which we shall have occasion to mention among the medicinal plants.

Next, after these, come the œnanthe,[42] the melanion,[43] and, among the wild plants, the helichrysos;[44] then, another kind of anemone, known as the "limonia,"[45] and after that the gladiolus,[46] accompanied by the hyacinth. Last of all, among the spring flowers, is the rose, which, with the exception indeed of the cultivated kinds, is also the first to fade. Among

[36] This has been thought to be the Cheiranthus incanus, Cheiranthus annus, and Leucoium vernum of modern botany; but Fée is of opinion that it is next to impossible to identify it. See c. 14 of this Book.

[37] See c. 33 of this Book.

[38] See B. xxv. c. 67.

[39] In c. 11 of this Book. There is no late variety of the lily known at the present day.

[40] Or "wind flower:" the Anemone coronaria of Linnæus.

[41] A ranunculus. See c. 94 of this Book.

[42] Or "vine-blossom." See c. 95 of this Book.

[43] Or "black violet," mentioned by Theophrastus, Hist. Plant. B. vi. c. 7. Pliny may probably mean the purple violet, mentioned by him in c. 14 of this Book. "Melanthium" is another reading.

[44] Not improbably the same as the "holochrysos," mentioned in c. 24 of this Book.

[45] "Meadow" anemone.

[46] "The little sword." See c. 67 of this Book.

the others, the flowers which last the longest, are the hyacinth, the white violet, and the œnanthe; but to make this last keep any time in flower, it is necessary to gather it repeatedly, to prevent it from running to seed. The œnanthe grows in warm localities, and has exactly the smell of the vine when in blossom, to which circumstance it is indebted for its name.

There are two fabulous stories attached to the hyacinth;[47] according to one of them, it bears the impress of the grief[48] which Apollo felt for the youth[49] whom he had so tenderly loved; and we learn from the other, that it derives its name from the blood[50] of Ajax, the veins being so arranged in the flower as to form the Greek letters AI inscribed upon it.

The helichrysos has a flower resembling gold in appearance, a small leaf, and a fine, slender, but hard, stem. According to the Magi, the person who crowns himself with a chaplet composed of this flower, and takes his unguents from a box of gold, of the kind generally known as "apyron,"[51] will be sure to secure esteem and glory among his fellowmen. Such are the flowers of spring.

CHAP. 39.—THE SUMMER FLOWERS—THE LYCHNIS: THE TIPHYON. TWO VARIETIES OF THE POTHOS. TWO VARIETIES OF THE ORSINUM. THE VINCAPERVINCA OR CHAMÆDAPHNE—A PLANT WHICH IS AN EVER-GREEN.

The summer flowers come next, the lychnis[52] the flower of

[47] There have been conflicting opinions as to the identification of the hyacinth of the ancients. Linnæus identifies it with the Delphinium Ajacis: Sprengel and Salmasius with the Gladiolus communis: Sibthorp with the Gladiolus communis triphyllos: Dodonæus and Porta the Lilium bulbiferum: and Martyn and Fée the Lilium Martagon of Linnæus, the Turk's-cap lily. From what Pliny says in cc. 39 and 97 of this Book, and in B. xxv. c. 80, it is pretty clear that under the name of hyacinth he has confused the characteristics of two different plants. The hyacinth, too, of Dioscorides, B. iii. c. 5, is a different plant, Fée remarks, being the Hyacinthus comosus of modern botanists.

[48] The Greek AI, "Alas!" which the ancients fancied they saw impressed on the leaves.

[49] See Ovid's Met. B. x. l. 162—220.

[50] See Ovid's Met. B. xiii. l. 397, *et seq.*

[51] "Unsullied by fire."

[52] Or "light" flower: the Agrostemma coronaria of Linnæus.

Jove, and another kind of lily,[53] as also the tiphyon[54] and the amaracus, surnamed that of Phrygia. But the most remarkable flower of all is the pothos,[55] of which there are two varieties, one with the flower of the hyacinth,[56] and another with a white flower, which is generally found growing about graves, and is better able to stand bad weather. The iris,[57] also, blossoms in summer. All these flowers pass away, however, and fade; upon which others assume their places in autumn, a third kind of lily,[58] for instance, saffron, and two varieties of the orsinum[59]—one of them inodorous and the other scented—making their appearance, all of them, as soon as the first autumnal showers fall.

The garland-makers employ the flowers of the thorn[60] even for making chaplets; the tender shoots, too, of the white thorn are sometimes preserved as a choice morsel[61] to tempt the palate.

Such is the succession of the summer flowers in the parts beyond sea: in Italy, the violet is succeeded by the rose, the lily comes on while the rose is still in flower, the cyanus[62] succeeds the rose, and the amaranth the cyanus. As to the vin-

[53] Theophrastus, Hist. Plant. B. vi. c. 7, mentions the "cerinthus" next after the flower of Jove: Pliny seems to have taken it for a kind of lily. This flower has not been identified.

[54] Sprengel takes this to be the Lavandula spica, or Lavender.

[55] Hardouin identifies this with the Lychnis Chalcedonica, or Cross of Jerusalem, with which opinion Fée seems inclined to coincide. Other commentators incline to the opinion that it is the Jasminum fruticans, a plant in which, beyond its smell, there is nothing at all remarkable. The exotic monocotyledon, known as the "Pothos," has no connection with the plant here mentioned.

[56] This, according to some, is the Lychnis Chalcedonica, the next being the Jasminum fruticans.

[57] As known to us, all the varieties of the iris blossom in spring.

[58] The purple lily, Fée thinks.

[59] If this is the correct reading, which is very doubtful, this plant is unknown. M. Jan has suggested that Pliny, in copying from Theophrastus, Hist. Plant. B. vi. c. 7, has read ὀρσινὸς by mistake for ὀρεινός, "mountainous," the original meaning being, "Two varieties of saffron, one of them growing on the mountains, the other cultivated;" and this last word being rendered by Pliny "hebes," translated above as meaning "inodorous."

[60] The Acanthus, probably. See B. xxii. c. 34, and B. xxiv. c. 66.

[61] Forskhal speaks of an acanthus in Arabia, the leaves of which are eaten raw. Fée thinks, that these shoots might be eaten without any inconvenience, but doubts if they would make such a tempting morsel as Pliny describes.

[62] Or blue-bell.

capervinca,[63] it is an evergreen, the branches from which run out like so many strings, the leaves surrounding the stem at each of the knots: though more generally used for the purposes of ornamental gardening, it is sometimes employed in chaplets when there is a deficiency of other flowers. From the Greeks this plant has received the name of "chamædaphne."

CHAP. 40.—THE DURATION OF LIFE IN THE VARIOUS KINDS OF FLOWERS.

At the very utmost, the white[64] violet never lasts longer than three years: should it exceed that period, it is sure to degenerate. The rose-tree will last so long as five years without being pruned or cauterized,[65] methods by which it is made to grow young again. We have already stated[66] that the nature of the soil is of the very greatest importance; for in Egypt, we find, all these plants are perfectly inodorous, and it is only the myrtle that has any particular smell. In some countries, too, the germination of all the plants precedes that in other parts of the world by so long a period as two months even. The rose-beds should be well spaded immediately after the west winds begin to prevail, and, a second time, at the summer solstice: every care, however, should be paid, between these two periods, to keeping the ground well raked and cleaned.

CHAP. 41. (12.)—PLANTS WHICH SHOULD BE SOWN AMONG FLOWERS FOR BEES. THE CERINTHA.

Bees and beehives, too, are a subject extremely well suited to a description of gardens and garland plants, while, at the same time, where they are successfully managed, they are a source, without any great outlay, of very considerable profit. For bees, then, the following plants should be grown—thyme, apiastrum, the rose, the various violets, the lily, the cytisus, the bean, the fitch, cunila, the poppy, conyza,[67] cassia, the me-

[63] Linnæus and other authorities identify this with the Clematis of Dioscorides, the Vinca major and minor of modern botany, our periwinkle. Fée, however, is inclined to identify it with the Chamædaphne, or groundlaurel of B. xv. c. 39, the Ruscus racemosus of Linnæus.

[64] See c. 38 of this Book.

[65] This method of cultivation, also mentioned by Theophrastus, is never employed in modern horticulture.

[66] In c. 10 of this Book.

[67] See B. xix. c. 50.

lilote, melissophyllum,[68] and the cerintha.[69] This last is a plant with a white leaf, bent inwards, the stem of it being a cubit in height, with a flower at the top presenting a concavity full of a juice like honey. Bees are remarkably fond of the flowers of these plants, as also the blossoms of mustard, a thing that is somewhat surprising, seeing that it is a well-known fact that they will not so much as touch the blossoms of the olive: for which reason, it will be as well to keep that tree at a distance from them.[70]

There are other trees, again, which should be planted as near the hives as possible, as they attract the swarm when it first wings its flight, and so prevent the bees from wandering to any considerable distance.

CHAP. 42.—THE MALADIES OF BEES, AND THE REMEDIES FOR THEM.

The greatest care, too, should be taken to keep the cornel[71] at a distance from the hives; for if the bees once taste the blossoms of it, they will speedily die of flux and looseness. The best remedy in such case is to give them sorb apples beaten up with honey, or else human urine or that of oxen, or pomegranate seeds moistened with Aminean[72] wine. It is a very good plan, too, to plant broom about the hives, the bees being extremely fond of the blossoms.

CHAP. 43.—THE FOOD OF BEES.

In relation to the food of bees, I have ascertained a very singular fact, and one that well deserves to be mentioned.

[68] "Honey-leaf." The Melissa officinalis of Linnæus: our balm-gentle. It is the same as the "apiastrum," though Pliny has erroneously made them distinct plants.

[69] "Wax-flower." The Cerinthe major of Linnæus: the greater honey-wort.

[70] See B. xi. c. 8. On the contrary, Virgil says, Georg. iv. l. 20, that a wild olive-tree should be planted near the hives, to protect them with its shade. Varro says also, De Re Rust. iii. 16, that the bee extracts honey from the olive-tree; but according to Aristotle, Hist. Anim. B. ix. c. 64, it is from the leaf, and not the flower of that tree that the honey is extracted.

[71] See B. xv. c. 31. Fée is inclined to doubt the correctness of the assertion here made by Pliny.

[72] See B. xiv. c. 5. The remedies for the diseases of bees in modern times are of a very similar nature, but attention is equally paid to the proper ventilation of the hives.

There is a village, called Hostilia, on the banks of the river Padus: the inhabitants of it, when food[73] fails the bees in their vicinity, place the hives in boats and convey them some five miles up the river in the night. In the morning the bees go forth to feed, and then return to the boats; their locality being changed from day to day, until at last, as the boats sink deeper and deeper in the water, it is ascertained that the hives are full, upon which they are taken home, and the honey is withdrawn.

(13.) In Spain, too, for the same purpose, they have the hives carried from place to place on the backs of mules.

CHAP. 44.—POISONED HONEY, AND THE REMEDIES TO BE EMPLOYED BY THOSE WHO HAVE EATEN OF IT.

Indeed, the food of bees is of the very greatest importance, as it is owing to this that we meet with poisonous[74] honey even. At Heraclia[75] in Pontus, the honey is extremely pernicious in certain years, though it is the same bees that make it at other times. Authors, however, have not informed us from what flowers this honey is extracted; we shall, therefore, take this opportunity of stating what we have ascertained upon the subject.

There is a certain plant which, from the circumstance that it proves fatal to beasts of burden, and to goats in particular, has obtained the name of "ægolethron,"[76] and the blossoms of

[73] This plan is still adopted on the river Po, the ancient Padus, as also at Beauce, in the south of France, where the hives are carried from place to place upon carts. In the north of England it is the practice to carry the hives to the moors in autumn.

[74] This has been doubted by Spielmann, but it is nevertheless the truth; the nature of the sugar secreted by the glands of the nectary, being analogous to that of the plant which furnishes it. The honey gathered from aconite in Switzerland has been known to produce vertigo and even delirium. Dr. Barton also gives a similar account of the effects of the poisonous honey collected from the Kalmia latifolia in Pennsylvania; and Geoffroi Saint Hilaire says that, having eaten in Brazil some honey prepared by a wasp called "lecheguana," his life was put in very considerable danger thereby. Xenophon also speaks of the effects of the intoxicating or maddening honey upon some of the Ten Thousand in their retreat.

[75] The rhododendrons and rose laurels, Fée says, which are so numerous in these parts, render the fact here stated extremely probable.

[76] "Goats' death." Fée says that this is the Rhododendron Ponticum of Linnæus. Desfontaines identifies it with the Azalea Pontica of modern botany.

which, steeped in the rains of a wet spring, contract most noxious properties. Hence it is that it is not every year that these dangerous results are experienced. The following are the signs of the honey being[77] poisonous: it never thickens, the colour is redder than usual, and it emits a peculiar smell which immediately produces sneezing; while, at the same time, it is more weighty than a similar quantity of good honey. Persons, when they have eaten of it, throw themselves on the ground to cool the body, which is bathed with a profuse perspiration. There are numerous remedies, of which we shall have occasion to speak in a more appropriate place;[77*] but as it will be as well to mention some of them on the present occasion, by way of being provided for such insidious accidents, I will here state that old honied wine is good, mixed with the finest honey and rue; salt meats, also, taken repeatedly in small quantities, and as often brought up again.

It is a well-known fact that dogs, after tasting the excretions of persons suffering from these attacks, have been attacked with similar symptoms, and have experienced the same kind of pains.

Still, however, it is equally well ascertained, that honied wine prepared from this honey, when old, is altogether innoxious; and that there is nothing better than this honey, mixed with costus,[78] for softening the skin of females, or, combined with aloes, for the treatment of bruises.

CHAP. 45.—MADDENING HONEY.

In the country of the Sanni, in the same part of Pontus, there is another kind of honey, which, from the madness it produces, has received the name of "mænomenon."[79] This evil effect is generally attributed to the flowers of the rhododendron,[80] with which the woods there abound; and that people, though it pays a tribute to the Romans in wax, derives no profit whatever from its honey, in consequence of these dangerous properties. In Persis, too, and in Gætulia, a district

[77] In reality, there are no visible signs by which to detect that the honey is poisonous.

[77*] B. xxix. c. 31.

[78] See B. xii. c. 25.

[79] Μαινόμενον, "maddening."

[80] The ægolethron of the preceding Chapter, Fée thinks. If so, the word rhododendron, he says, would apply to two plants, the Nerion oleander or rose laurel (see B. xvi. c. 33), and the Rhododendron Ponticum.

of Mauritania Cæsariensis, bordering on the country of the Massæsyli, there are poisonous honeycombs found; and some, too, only partly so,[81] one of the most insidious things that possibly could happen, were it not that the livid colour of the honey gives timely notice of its noxious qualities. What can we suppose to have possibly been the intention of Nature in thus laying these traps in our way, giving us honey that is poisonous in some years and good in others, poisonous in some parts of the combs and not in others, and that, too, the produce in all cases of the self-same bees? It was not enough, forsooth, to have produced a substance in which poison might be administered without the slightest difficulty, but must she herself administer it as well in the honey, to fall in the way of so many animated beings? What, in fact, can have been her motive, except to render mankind a little more cautious and somewhat less greedy?

And has she not provided the very bees, too, with pointed weapons, and those weapons poisoned to boot? So it is, and I shall, therefore, without delay, set forth the remedies to counteract the effects of their stings. It will be found a very excellent plan to foment the part stung with the juice of mallows[82] or of ivy leaves, or else for the person who has been stung to take these juices in drink. It is a very astonishing thing, however, that the insects which thus carry these poisons in their mouths and secrete them, should never die themselves in consequence; unless it is that Nature, that mistress of all things, has given to bees the same immunity from the effects of poison which she has granted against the attacks of serpents to the Psylli[83] and the Marsi among men.

CHAP. 46. (14.)—HONEY THAT FLIES WILL NOT TOUCH.

Another marvellous fact, again, connected with honey in Crete. Upon Mount Carma in that island, which is nine miles in circuit, there is not a fly to be found, and the honey that is made there no fly will touch.[84] It is by this circum-

[81] Fée refuses to credit this: but still such a thing might accidentally happen.

[82] These asserted remedies would be of no use whatever, Fée says.

[83] See B. vii. c. 2.

[84] Fée seems to take it for granted that Pliny is speaking here of honey made by other insects than bees; but such does not appear to be the case.

stance that honey said to have come from that district is usually tested, it being highly prized for medicinal preparations.

CHAP. 47.—BEEHIVES, AND THE ATTENTION WHICH SHOULD BE PAID TO THEM.

The hives ought to have an aspect due east,[85] but never looking towards the north-east or the west. The best hives are those made of bark, the next best those of fennel-giant, and the next of osier: many persons, too, have them made of mirror-stone,[86] for the purpose of watching[87] the bees at work within. It is the best plan to anoint the hives all over with cow-dung. The lid of the hive should be made to slide from behind, so as to admit of being shut to within, in case the hive should prove too large or their labours unproductive; for, if this is not done, the bees are apt to become discouraged and abandon their work. The slide may then be gradually withdrawn, the increase of space being imperceptible to the bees as the work progresses. In winter, too, the hives should be covered with straw, and subjected to repeated fumigations, with burnt cow-dung more particularly. As this is of kindred[88] origin with the bees, the smoke produced by it is particularly beneficial in killing all such insects as may happen to breed there, such as spiders, for instance, moths,[89] and wood-worms;[90] while, at the same time, it stimulates the bees themselves to increased activity. In fact, there is little difficulty in getting rid of the spiders, but to destroy the moths, which are a much greater plague, a night must be chosen in spring, just when the mallow is ripening, there being no moon, but a clear sky: flambeaux are then lighted before the hives, upon which the moths precipitate themselves in swarms into the flame.

[85] Fée remarks here that Pliny is right, and that Columella and Palladius are wrong, who would have the hives to look due north.

[86] Lapis specularis: a sort of talc, probably. See B. iii. c. 4. B. ix. c. 56. B. xv. c. 1. B. xix. c. 23, and B. xxxvi. c. 45.

[87] In B. ix. c. 16, he mentions hives made of horn for this purpose. Glass hives are now made for the purpose, but the moisture which adheres to the interior of the glass prevents the operations of the bees from being watched with any degree of nicety.

[88] "Cognatum hoc." He probably alludes to the notion entertained by the ancients that bees might be reproduced from the putrefied entrails of an ox, as wasps from those of a horse. See the story of Aristæus in B. iv. of Virgil's Georgics.

[89] Or butterflies—"papiliones."

[90] "Teredines."

CHAP. 48.—THAT BEES ARE SENSIBLE OF HUNGER.

If it is found that the bees are in want of aliment, it will be a good plan to place at the entrance of the hive raisins or dried figs beaten up,[91] as also carded wool soaked in raisin wine, boiled[92] must, or hydromel, and sometimes even the raw[93] flesh of poultry. In certain summers, too, when long-continued drought has deprived them of the nutriment which they usually derive from flowers, similar food must be provided for them.

When the honey is taken, the outlets of the hive should be well rubbed with melissophyllum or broom,[94] beaten up, or else the middle of it should be encircled with bands of white vine, to prevent the bees from taking to flight. It is recommended, too, that the honey-pots and combs should be washed with water: this water, boiled, it is said, will make an extremely wholesome vinegar.[95]

CHAP. 49.—THE METHOD OF PREPARING WAX. THE BEST KINDS OF WAX. PUNIC WAX.

Wax is made[96] from the honeycombs after the honey has been extracted. For this purpose, they are first cleaned with water, and then dried three days in the shade: on the fourth day they are melted on the fire in a new earthen vessel, with sufficient water to cover them, after which the liquor is strained off in a wicker basket.[97] The wax is then boiled again with the same water and in the same pot, and poured into vessels of cold water, the interior of which has been well rubbed with honey. The best wax is that known as Punic[98] wax, the next best being that of a remarkably yellow colour, with the smell of honey. This last comes from Pontus, and, to my surprise, it is in no way affected by the poisonous honey which it has

[91] Honeycombs and rough wax are placed in the hive, when the bees are in want of aliment; also honey and sugar-sirop.

[92] "Defrutum:" grape-juice boiled down to one-half.

[93] Fée is at a loss to know how this could be of any service as an aliment to bees.

[94] A mere puerility, Fée says.

[95] But extremely weak, no doubt; for after boiling, the hydromel must be subjected, first to vinous, and then to acetous, fermentation.

[96] The method here described differs but little from that employed at the present day.

[97] "Sporta."

[98] Or Carthaginian.

contained.[99] The next in quality is the Cretan wax, which contains the largest proportion of propolis,[1] a substance of which we have previously made mention when treating of bees. Next to these varieties comes the Corsican wax, which, being the produce of the box-tree, is generally thought to be possessed of certain medicinal properties.

The Punic wax is prepared in the following manner: yellow wax is first blanched in the open air, after which it is boiled in water from the open sea, with the addition of some nitre.[2] The flower of the wax, or, in other words, the whitest part of it, is then skimmed off with spoons, and poured into a vessel containing a little cold water. After this, it is again boiled in sea-water by itself, which done, the vessel is left to cool. When this operation has been three times repeated, the wax is left in the open air upon a mat of rushes, to dry in the light of the sun and moon; for while the latter adds to its whiteness, the sun helps to dry[3] it. In order, however, that it may not melt, it is the practice to cover it with a linen cloth: if, when it has been thus refined, it is boiled once more, the result is a wax of the greatest possible whiteness.

Punic wax is considered the best for all medicinal preparations. Wax is made black by the addition of ashes of papyrus, and a red colour is given to it by the admixture of alkanet; indeed, by the employment of various pigments, it is made to assume various tints, in which state it is used for making models,[4] and for other purposes without number, among which we may mention varnishing walls[5] and armour, to protect them from the air. We have given the other particulars relative to bees and honey, when speaking[6] of the nature of those insects. We have now stated pretty nearly all that we have to say on the subject of the pleasure garden.

[99] In reality, the wax has properties totally different from those of the honey, and it is not always gathered from the same plants.

[1] A kind of bee-glue. See B. xi. c. 6.

[2] Neither the nitre nor the salt, Fée says, would be of the slightest utility.

[3] By causing the aqueous particles that may remain in it, to evaporate.

[4] Or "likenesses"—"similitudines." Waxen profiles seem to have been the favourite likenesses with the Romans: See the Asinaria of Plautus, A. iv. sc. i. l. 19, in which one of these portraits is clearly alluded to. Also Ovid, Heroid. xiii. l. 152, and Remed. Amor. l. 723. The "imagines" also, or busts of their ancestors, which were kept in their "atria," were made of wax.

[5] To protect the paintings, probably, with which the walls were decorated.

[6] In B. xi.

CHAP. 50. (15.)—PLANTS WHICH GROW SPONTANEOUSLY: THE USE MADE OF THEM BY VARIOUS NATIONS, THEIR NATURE, AND REMARKABLE FACTS CONNECTED WITH THEM. THE STRAWBERRY, THE TAMNUS, AND THE BUTCHER'S BROOM. THE BATIS, TWO VARIETIES OF IT. THE MEADOW PARSNIP. THE HOP.

We now come to the plants which grow spontaneously, and which are employed as an aliment by most nations, the people of Egypt in particular, where they abound in such vast quantities, that, extremely prolific as that country is in corn, it is perhaps the only one that could subsist without it: so abundant are its resources in the various kinds of food to be obtained from plants.

In Italy, however, we are acquainted with but very few of them; those few being the strawberry,[7] the tamnus,[8] the butcher's broom,[9] the sea[10] batis, and the garden batis,[11] known by some persons as Gallic asparagus; in addition to which we may mention the meadow parsnip[12] and the hop,[13] which may be rather termed amusements for the botanist than articles of food.

CHAP. 51.—THE COLOCASIA.

But the plant of this nature that is the most famous in Egypt is the colocasia,[14] known as the "cyamos"[15] to some. It is gathered in the river Nilus, and the stalk of it, boiled,

[7] See B. xv. c. 28.

[8] See B. xxiii. c. 17. According to some authorities, it is supposed to be the Delphinium staphis agria of Linnæus; but Fée and Desfontaines identify it with the Tamus communis of Linnæus, Our Lady's seal.

[9] The Ruscus aculeatus of Linnæus. See B. xxiii. c. 83.

[10] In B. xxii. c. 33, this plant is called "halimon." Some authors identify it with the Atriplex halymus, and others, again, with the Crithmum maritimum of Linnæus. See also B. xxvi. c. 50.

[11] Identified by some commentators with the Portulaca sativa or Portulaca oleracea of Linnæus.

[12] "Pastinaca pratensis." Fée and Desfontaines are undecided whether this is the Daucus carota of Linnæus, the common carrot, or the Pastinaca sativa, the cultivated parsnip.

[13] "Lupus salictarius," the "willow wolf," literally; the Humulus lupulus of Linnæus. It probably took its Latin name from the tenacity with which it clung to willows and osiers.

[14] The Arum colocasia of Linnæus.

[15] The "bean." Not, however, the Egyptian bean, which is the Nymphæa nelumbo of Linnæus, the Nelumbum speciosum of Willdenow.

separates[16] into fine filaments when chewed, like those of the spider's web. The head,[17] protruding from among the leaves, is very remarkable; and the leaves, which are extremely large, even when compared with those of trees, are very similar to those of the plant found in our rivers, and known by the name of "personata."[18] So much do the people of that country take advantage of the bounteousness displayed by their river, that they are in the habit of plaiting[19] the leaves of the colocasia with such skill as to make vessels of various shapes, which they are extremely fond of using for drinking vessels. At the present day, however, this plant is cultivated in Italy.[20]

CHAP. 52.—THE CICHORIUM. THE ANTHALIUM OR ANTICELLIUM, OR ANTHYLLUM. THE ŒTUM. THE ARACHIDNA. THE ARACOS. THE CANDRYALA. THE HYPOCHŒRIS. THE CAUCALIS. THE ANTHRISCUM. THE SCANDIX. THE TRAGOPOGON. THE PARTHENIUM OR LEUCANTHES, AMARACUS, PERDICIUM, OR MURALIS. THE TRYCHNUM OR STRYCHNUM, HALICACABUM, CALLIAS, DORYCNION, MANICON, PERITTON, NEURAS, MORIO, OR MOLY. THE CORCHORUS. THE APHACE. THE ACYNOPOS. THE EPIPETRON. PLANTS WHICH NEVER FLOWER. PLANTS WHICH ARE ALWAYS IN FLOWER.

In Egypt, next to the colocasia, it is the cichorium that is held in the highest esteem, a plant which we have already spoken[21] of under the name of wild endive.[22] It springs up after the rising of the Vergiliæ, and the various portions of it blossom in succession: the root is supple, and hence is used for making withes even. The anthalium[23] grows at a greater

[16] These filaments are mentioned also by Martial, Epig., B. viii. Ep. 33, and B. xiii. Ep. 57. But according to Desfontaines, this description applies to the stalks of the Nymphæa lotos, and not of the Arum colocasia.

[17] "Thyrsus."

[18] Desfontaines has identified this with the Arctium lappa of botanists; but that is a land plant, and this, Pliny says, grows in the rivers. If the reading here is correct, it cannot be the plant of the same name mentioned in B. xxv. c. 58.

[19] This applies, Desfontaines says, to the Nymphæa nelumbo.

[20] Here he returns, according to Desfontaines, to the Arum colocasia.

[21] See B. xx. c. 29.

[22] "Intubum erraticum."

[23] The Cyperus Esculentus of Linnæus.

distance[24] from the river; the fruit of it is round,[25] and about the size of a medlar, but without either kernel or rind; the leaves of the plant are similar to those of the cyperus. The people there eat the fruit of it cooked upon the fire, as also of the cœtum,[26] a plant which has a few leaves only, and those extremely diminutive, though the root is large in proportion.[27] The arachidna,[28] again, and the aracos have numerous branchy roots, but neither leaves nor any herbaceous parts, nor, indeed, anything that makes its appearance above ground.

The other plants that are commonly eaten in Egypt are the chondrylla,[29] the hypochœris,[30] the caucalis,[31] the anthriscum,[32] the scandix, the come, by some persons known as the tragopogon,[33] with leaves very similar to those of saffron, the parthenium,[34] the trychnum,[35] and the corchorus;[36] with the aphace[37] and acynopos,[38] which make their appearance at the equinox. There is a plant also, called the epipetron,[39] which

[24] Theophrastus, B. iv. c. 10, says that it grows in the sandy soil in the vicinity of the river.

[25] It is similar in appearance to the papyrus, and its tubercles are oblong, or round and fleshy, with an agreeable flavour.

[26] The Arachis hypogæa of Linnæus, the earth pistachio.

[27] The root is not large; but the fruit is so close to the earth that Pliny may have confounded it with the real root of the plant.

[28] Sprengel identifies this with the Lathyrus amphicarpos, and the aracos with the Lathyrus tuberosus, varieties of the chicheling vetch. Columna thinks that this last was the arachidna. Fée says that the data are altogether insufficient to enable us to form an opinion.

[29] The Chondrylla juncea of Linnæus, according to Fée; but Desfontaines identifies it with the Lactuca perennis.

[30] Desfontaines identifies it with the Hyoseris lucida. Fée says that the opinion is equally as difficult to combat as to support.

[31] Fée identifies it with the Caucalis grandiflora of Linnæus, a native of Greece. Desfontaines mentions the Caucalis Orientalis, an Eastern plant.

[32] For this and the Scandix, see B. xxii. c. 38.

[33] A chicoraceous plant: the Tragopogon crocifolius of Linnæus.

[34] See c. 104 of this Book.

[35] See cc. 35 and 105 of this Book.

[36] The Corchorus olitorius of Linnæus: still cultivated in Egypt.

[37] Identified by some, but it is doubtful if with any good reason, with the Leontodon taraxacum of Linnæus: our dandelion.

[38] The reading is doubtful, and it does not appear to have been identified.

[39] Or "stone-plant:" identified with the Sedum anacampseros of Linnæus: a variety of house-leek.

never blossoms;[40] while the aphace, on the other hand, as its flowers die, from time to time puts forth fresh ones, and remains[41] in blossom throughout the winter and the spring, until the following summer.

CHAP. 53.—FOUR VARIETIES OF THE CNECOS.

The Egyptians have many other plants also, of little note; but they speak in the highest terms of the cnecos;[41*] a plant unknown to Italy, and which the Egyptians hold in esteem, not as an article of food, but for the oil it produces, and which is extracted from the seed. The principal varieties are the wild and the cultivated kinds; of the wild variety, again, there are two sorts, one of which is less prickly[42] than the other, but with a similar stem, only more upright: hence it is that in former times females used it for distaffs, from which circumstance it has received the name of "atractylis"[43] from some; the seed of it is white, large, and bitter. The other variety[44] is more prickly, and has a more sinewy stem, which may be said almost to creep upon the ground; the seed is small. The cnecos belongs to the thorny plants: indeed, it will be as well to make some classification of them.

CHAP. 54.—PLANTS OF A PRICKLY NATURE: THE ERYNGE, THE GLYCYRRIZA, THE TRIBULUS, THE ANONIS, THE PHEOS OR STŒBE, AND THE HIPPOPHAES.

For some plants, in fact, are thorny, while others, again, are destitute of prickles: the species of thorny plants are very numerous. The asparagus[45] and the scorpio[46] are essentially thorny plants, having no leaves at all upon them. Some

[40] On the contrary, it has a purple flower.

[41] It is this, probably, that has caused it to be identified with the Leontodon taraxacum.

[41*] The Carthamus tinctorius of Linnæus, or bastard saffron. The seed of it is a powerful purgative to man, but has no effect on birds: it is much used for feeding parrots, hence one of its names, "parrot-seed."

[42] Identified by Fée with the Atractylis of Dioscorides, the Carthamus mitissimus of Linnæus; the Carduncellus mitissimus of Decandolle.

[43] From ἄτρακτος, "a distaff."

[44] The Centaurea lanata of Decandolle, the Centaurea benedicta of Linnæus.

[45] The Asparagus aphylla of Linnæus: the leafless asparagus.

[46] The Spartium scorpius of Linnæus: scorpion-grass, or scorpion-wort.

plants, again, that are prickly have leaves as well, such as the thistle, for instance, the erynge,[47] the glycyrriza,[48] and the nettle;[49] all these plants being provided with leaves that prick or sting.

Some plants have thorns at the base of their leaves, the tribulus[50] and the anonis[51] for instance; others, again, have thorns, not on the leaves but on the stem, the pheos[52] for example, known as the stœbe to some. The hippophaës[53] has thorns at the joints; the tribulus presents the peculiarity of bearing a fruit that is thorny.

CHAP. 55.—FOUR VARIETIES OF THE NETTLE. THE LAMIUM AND THE SCORPIO.

But of all these plants, it is the nettle that is the best known to us, the calyces[54] of the blossoms of which produce a purple down: it frequently exceeds two cubits even in height.[55] There are numerous varieties of this plant; the wild nettle, known also as the female nettle, does not inflict so bad a sting as the others. Among the several varieties of the wild nettle, the one known as the dog[56]-nettle, stings the

[47] See B. xxii. c. 8.

[48] See B. xxii. c. 11. The "sweet-root;" our liquorice. The Glycyrrhiza echinata of Linnæus bears a prickly fruit; it is of this, Fée thinks, that Pliny speaks here.

[49] Fée remarks, that though the leaf of the nettle is furnished with numerous stings, or rather prickly hairs, it is quite wrong to look upon them as thorns, which Pliny, in the present instance, (though not in the next Chapter) appears to do. Genuine thorns, he remarks, are abortive branches, which, of course, cannot be said of the fine hairs springing from the nerves of the leaf. See B.xxii. c. 15.

[50] Supposed to be the Tribulus terrestris of Linnæus, a species of thistle: the leaves of this plant, however, are not provided, Fée remarks, with thorns at their base, the fruit alone being spinous. See c. 58 of this Book.

[51] See c. 58 of this Book.

[52] The Poterium spinosum of botanists. See B. xxii. c. 13.

[53] See B. xxii. c. 13. Theophrastus, Hist. Plant. B. vi. c. 5, identifies this plant with the Stœbe just mentioned.

[54] "Acetabulis." Fée complains of the use of this term (meaning a "small cup") in relation to the calyces of the nettle; such not being in reality their form.

[55] Probably in allusion to the Urtica dioica, which grows to a greater height than the Urtica urens. See B. xxii. c. 15.

[56] "Canina." A variety, probably, of the Urtica urens, the nettle, with

worst, the stem of it even possessing that property; the leaves of the nettle are indented at the edge. There is one kind also, which emits a smell, known as the Herculanean[57] nettle. The seed of all the nettles is copious, and black. It is a singular fact that, though possessed of no spinous points, the down[58] of the nettle is of a noxious nature, and that, though ever so lightly touched, it will immediately produce an itching sensation, and raise a blister on the flesh similar in appearance to a burn: the well-known remedy for it is olive oil.

The stinging property of the nettle does not belong to the plant at the earliest period of its growth, but only developes itself under the influence of the sun. The plant first begins to grow in the spring, at which period it is by no means a disagreeable food;[59] indeed, it has become quite a religious observance to employ it as such, under the impression that it is a preventive from diseases the whole year through. The root, too, of the wild nettle, has the effect of rendering all meat more tender that is boiled with it.[60] The kind that is innoxious and destitute of all stinging properties, is known as the "lamium."[61] Of the scorpio[62] we shall have occasion to speak when treating of the medicinal plants.

the exception of the Urtica pilifera, which has the most stinging properties of all those found in Europe, and the leaves of which are the most deeply indented.

[57] This has not been identified. They are all of them either inodorous, or else possessed of a faint, disagreeable smell.

[58] This "lanugo," or down, as he calls it, consists of a fine elongated tube of cellular tissue, seated upon a gland of similar tissue. In this gland a poisonous fluid is secreted, and when any pressure is made upon the gland, the fluid passes upwards in the tube. The nettle of the East, known as the Devil's Leaf, is of so poisonous a quality as to produce death.

[59] In some parts of the north of England and of Scotland the young plant of the Urtica dioica is eaten as greens, and is far from a disagreeable dish, strongly resembling spinach. It is also reckoned a very wholesome diet, and is taken habitually in the spring, under the impression that it purifies the blood. This notion, we see from the context, is as old as the time of the Romans.

[60] Dalechamps speaks of it as the custom in his time to wrap up fish and game in nettles, under the impression that they would keep the longer for it.

[61] The dead nettle, or blind nettle. See B. xxii. c. 16.

[62] See B. xxii. c. 17.

CHAP. 56. (16).—THE CARDUUS, THE ACORNA, THE PHONOS, THE LEUCACANTHOS, THE CHALCEOS, THE CNECOS, THE POLYACANTHOS, THE ONOPYXOS, THE HELXINE, THE SCOLYMOS, THE CHAMÆLEON, THE TETRALIX, AND ACANTHICE MASTICHE.

The carduus[63] has leaves and a stem covered with a prickly down; the same is the case, too, with the acorna,[64] the leucacanthos,[65] the chalceos,[66] the cnecos,[67] the polyacanthos,[68] the onopyxos,[69] the helxine,[70] and the scolymos;[71] the chamæleon,[72] however, has no prickles upon the leaves. There is, however, this difference among these plants, that some of them have numerous stems and branches, such as the carduus, for instance; while others, again, have a single stem and no branches, the cnecos, for example. Some, again, such as the erynge,[72*] are prickly at the head only; and some blossom in the summer, the tetralix and the helxine, for instance. The scolymos blossoms late, and remains a considerable period in flower: the acorna being distinguished only for its red colour and its unctuous juice. The atractylis would be similar in every respect to the last, were it not that it is somewhat whiter, and produces a juice the colour of blood, a circumstance to which it owes the name of "phonos,"[73] given to it by some.

[63] He probably means the thistle, but possibly the artichoke, under this name. See B. xix. cc. 19 and 43, and B. xx. c. 99.

[64] This is probably the same with the second variety of the "Cnecos," mentioned above in c. 53, the Centaurea lanata, or benedicta.

[65] Probably the Carduus leucographus of Linnæus.

[66] According to Dalechamps, this is the Echinops ritro of modern botany.

[67] See c. 93 of this Book.

[68] "Many thorns." According to Dalechamps, this is the Carduus spinosissimus angustifolius vulgaris of C. Bauhin, the Cirsium spinosissimum of Linnæus.

[69] Identified by Dalechamps with the Onopordon Illyricum, or Acanthium of modern botany.

[70] The Acarna gummifera of modern botanists, the flowers of which yield a kind of gum with an agreeable smell. It is quite a different plant from Wall pellitory, mentioned in B. xxii. c. 19, under this name.

[71] See B. xx. c. 99, and B. xxii. c. 43.

[72] The black chamæleon is identified by Fée with the Brotera corymbosa of Willdenow: the white variety, mentioned in B. xxii. c. 21, with the Acarna gummifera of Willdenow, the Helxine above mentioned. Desfontaines identifies it with the Carlina acaulis.

[72*] See B. xxii. c. 8.

[73] The Greek for "blood" or "slaughter."

The smell of this plant is powerful, and the seed only ripens at a late period, and never before autumn, although the same may be said of all the prickly plants, in fact. All of them are capable, however, of being reproduced from either seed or root.

The scolymos, which belongs to the thistle[74] genus, differs from the rest of them in the circumstance that the root of it is boiled and eaten. It is a singular fact that this genus of plants bears blossoms, buds, and fruit the whole of the summer through, without any interruption: when the leaf is dried, the prickles lose their pungency. The helxine is a plant but rarely seen, and in some countries only. It throws out leaves at the root, from the middle of which there is a protuberance in the shape of an apple, covered with leaves of its own: the head of it contains a thick juice of a sweet flavour, the name given to which is "acanthice mastiche."[75]

CHAP. 57.—THE CACTOS; THE PTERNIX, PAPPUS, AND ASCALIAS.

The cactos,[76] too, is a plant that grows only in Sicily, having peculiar characteristics of its own: the root throws out stalks which creep along the ground, the leaves being broad and thorny. The name given to these stalks is "cactos," and they are not disliked as an article of food,[77] even when old. The plant, however, has one stem which grows upright, and is known by the name of "pternix;" it has the same sweet flavour as the other parts, though it will not keep. The seed of it is covered with a kind of down, known as "pappus:"[78] when this is removed, as well as the rind[79] of the fruit, it is tender, and like the pith of the palm: the name given to it is "ascalias."

[74] "Carduus." [75] "Thorn mastich," or "resin."

[76] This is not the Cactus of modern botany, a plant mentioned in the sequel under the name of "Opuntia," but probably the Cinara cardunculus. See B. xx. c. 99.

[77] Theophrastus says, that when peeled they have a somewhat bitter flavour, and are kept pickled in brine.

[78] This name is now given by naturalists to the calyx of Compositæ, which exists in the rudimentary condition of a membranous coronet, or of downy hairs, like silk. [79] "Cortex."

CHAP. 58.—THE TRIBULUS: THE ANONIS.

The tribulus[80] grows nowhere except in marshy places: though held in abomination elsewhere,[81] it is employed on the banks of the Nilus and Strymon as an article of food. It always bends towards the water, and has a leaf like that of the elm, with a long stalk. In other parts of the world there are two varieties of this plant; the one[82] with leaves like those of the chicheling vetch, the other with leaves protected by prickles. This last variety blossoms also at a later period than the other, and is mostly found in the hedge-rows about farm-houses. The seed of it is black, rounder than that of the other, and enclosed in pods: that of the other variety bears a resemblance to sand.

Among the prickly plants there is also another kind, known as the "anonis:"[83] indeed, it has thorns upon the branches, to which leaves are attached similar to those of rue, the stem being entirely covered also with leaves, in form resembling a garland. It comes up in land that has been newly ploughed, being highly prejudicial to the corn, and long-lived in the extreme.

CHAP. 59.—PLANTS CLASSIFIED ACCORDING TO THEIR STEMS: THE CORONOPUS, THE ANCHUSA, THE ANTHEMIS, THE PHYLLANTHES, THE CREPIS, AND THE LOTUS.

Some, again, among the prickly plants have a stem which creeps along the ground, that, for instance, known as the "coronopus."[84] On the other hand, the anchusa,[85] the root of which is employed for dyeing wood and wax, has an upright stem; which is the case also with some of the plants that are prickly in a less degree, the anthemis,[86] for example, the phyl-

[80] The Trapa natans of Linnæus, or water chesnut, a prickly marsh plant of Europe and Asia. Hence our word "caltrop."

[81] "Dira res alibi."

[82] These two plants have no affinity whatever with the one just mentioned. The first of these so-called varieties is the Tribulus terrestris of Linnæus; and the second is identified by Fée, though with some doubt, with the Fagonia Cretica of Linnæus.

[83] The Ononis antiquorum of Linnæus, the Cammock, or rest-harrow.

[84] The Cochlearia coronopus. See B. xxii. c. 22.

[85] The Anchusa tinctoria, probably, or dyers' alkanet. See B. xxii. c. 23.

[86] See B. xxii. c. 26.

lanthes,[87] the anemone, and the aphace:[88] the crepis,[89] again, and the lotus,[90] have a foliated stem.

CHAP. 60.—PLANTS CLASSIFIED ACCORDING TO THEIR LEAVES. PLANTS WHICH NEVER LOSE THEIR LEAVES: PLANTS WHICH BLOSSOM A LITTLE AT A TIME: THE HELIOTROPIUM AND THE ADIANTUM, THE REMEDIES DERIVED FROM WHICH WILL BE MENTIONED IN THE FOLLOWING BOOK.

The leaves of plants, as well as those of trees, differ from one another in the length of the footstalk, and in the breadth or narrowness of the leaf, and the angles and indentations perceptible on its edge. Other differences are also constituted in respect of their smell and blossom. The blossom remains on longer in some of those plants which flower only a little at a time, such as the ocimum,[91] the heliotropium,[92] the aphace, and the onochilis,[93] for example.

(17.) Many of these plants, the same as certain among the trees, never lose their leaves, the heliotropium,[94] the adiantum[95] and the polium,[96] for instance.

[87] It has not been identified with any degree of certainty: the Centaurea nigra and the Campanula rapunculus have been named.

[88] See B. xxvii. c. 21: also c. 52 of this Book. The name appears to have been given to both the Leontodon taraxacum and the Lathyrus aphaca of modern botany.

[89] Theophrastus has Picris in the parallel passage, Hist. Plant. B. vii. c. 9, the Helminthia echioides of Linnæus. If "Crepis" is the correct reading, that plant has not been identified.

[90] The herbaceous kinds are no doubt those alluded to.

[91] See B. xix. cc. 31, 36, and 44; and B. xx. c. 48. The ocimum of the Greeks has been identified by some with the Ocimum basilicum of Linnæus, our basil. That of the Romans seems to have been a name given to one or more varieties of leguminous plants of the vetch kind.

[92] The Heliotropium Europæum. See B. xxii. c. 29.

[93] This plant has not been identified, but Fée is inclined, from what Dioscorides says, B. iv. c. 24, to identify it with either the Lithospermum fruticosum, or else the Anchusa Italica of Linnæus.

[94] This is not the case, if this plant is identical with the Heliotropium Europæum, that being an annual.

[95] The Adiantum Capillus Veneris of Linnæus, or the Asplenium trichomanes of Linnæus. "Venus hair, or coriander maiden hair; others name it to be well fern."—T. Cooper. The leaves of these plants last the whole of their lives.

[96] The Teucrium polium of Linnæus, our poley; the leaves of which are remarkably long-lived.

CHAP. 61.—THE VARIOUS KINDS OF EARED PLANTS: THE STANYOPS; THE ALOPECUROS; THE STELEPHUROS, ORTYX, OR PLANTAGO; THE THRYALLIS.

The eared[97] plants form another variety: among them we find the cynops,[98] the alopecuros,[99] the stelephuros,[1] also known to some persons as the ortyx,[2] and to others as the plantago, of which last we shall have occasion[2*] to speak more at length among the medicinal plants, and the thryallis.[3] The alopecuros, among these, has a soft ear and a thick down, not unlike a fox's tail in fact, to which resemblance it owes its name. The plant most like[4] it is the stelephuros, were it not that it blossoms only a little at a time. In the cichorium and similar plants, the leaves are near the ground, the buds springing from the root just after the rising of the Vergiliæ.[5]

CHAP. 62.—THE PERDICIUM. THE ORNITHOGALE.

It is not in Egypt only that the perdicium[6] is eaten; it owes its name to the partridge,[7] which bird is extremely fond of digging it up. The roots of it are thick and very numerous: and so, too, with the ornithogale,[8] which has a tender white stalk, and a root half a foot in thickness, bulbous, soft, and

97 "Spicatæ."

98 Fée is in doubt whether to identify it with the Plantago cynops of the south of Europe, and the banks of the Rhine.

99 "Foxtail." According to Dalechamps, it is the Saccharum cylindricum, the Lagurus of Linnæus; but Fée expresses his doubts as to their identity.

1 Fée inclines to think that it may be the Secale villosum of Linnæus; though the more recent commentators identify it with the Plantago angustifolia. The Saccharum Ravennæ has been suggested.

2 Or "quail."

2* In B. xxv. c. 39.

3 Hardouin takes this to be our pimpernel, the Sanguisorba officinalis of Linnæus. Sprengel inclines to the Verbascum lychnitis of Linnæus.

4 "Proxuma."

5 See B. xviii. c. 66.

6 Supposed by most commentators to be the Parietaria officinalis of Linnæus; Wall pellitory or parietary. Some, however, have suggested the Polygonum maritimum, or the Polygonum divaricatum of Linnæus. Fée expresses doubts as to its identity, but remarks that the modern Greek name of pellitory is "perdikaki." See c. 104 of this Book, and B. xxii. c. 20.

7 "Perdix," the Greek name.

8 Probably the Ornithogalum umbellatum of Linnæus. Sprengel identifies it with the Ornithogalum natans: but that variety is not found in Greece, while the other is.

provided with three or four other offsets attached to it. It is generally used boiled in pottage.[9]

CHAP. 63.—PLANTS WHICH ONLY MAKE THEIR APPEARANCE AT THE END OF A YEAR. PLANTS WHICH BEGIN TO BLOSSOM AT THE TOP. PLANTS WHICH BEGIN TO BLOSSOM AT THE LOWER PART.

It is a remarkable thing that the herb lotus[10] and the ægilops[11] never make their appearance above ground till the end of a year after the seed has been sown. The anthemis,[12] too, offers the singular peculiarity that it begins to blossom at the top, while in all the other plants which flower gradually, it is at the lower part that the blossom first makes its appearance.

CHAP. 64.—THE LAPPA, A PLANT WHICH PRODUCES WITHIN ITSELF. THE OPUNTIA, WHICH THROWS OUT A ROOT FROM THE LEAF.

In the lappa,[13] too, which clings so tenaciously, there is this remarkable peculiarity, that within it there grows a flower, which does not make its appearance, but remains concealed, and there produces the seed, like those among the animals which produce within themselves. In the vicinity of Opus there grows a plant[14] which is very pleasant eating to man, and the leaf of which, a most singular thing, gives birth to a root by means of which it reproduces itself.

CHAP. 65.—THE IASIONE. THE CHONDRYLLA. THE PICRIS, WHICH REMAINS IN FLOWER THE WHOLE YEAR THROUGH.

The iasione[15] has a single leaf only, but that so folded and involved, as to have all the appearance of being several in number. The chondrylla[16] is bitter, and the juice of the root

[9] "Puls."

[10] Probably the Melilotus cœrulea of Linnæus, Fée says. Desfontaines mentions the Melilotus Cretica or Italica.

[11] The Avena fatua or sterilis; the barren oat. See B. xviii. c. 44.

[12] See B. xxii. c. 26.

[13] The Gallium aparine of Linnæus. See B. xviii. c. 44.

[14] The Opuntia. The Cactus Opuntia of Linnæus; the cactus, or Indian fig.

[15] Perhaps the Convolvulus sepium of Linnæus; though Fée dissents from that opinion. See B. xxii. c. 39.

[16] See c. 52 of this Book.

is of an acrid taste. The aphace, too, is bitter, and so is the plant called "picris,"[17] which also remains in flower the whole year through: it is to this bitterness that it is indebted for its name.[18]

CHAP. 66.—PLANTS IN WHICH THE BLOSSOM MAKES ITS APPEARANCE BEFORE THE STEM. PLANTS IN WHICH THE STEM APPEARS BEFORE THE BLOSSOM. PLANTS WHICH BLOSSOM THREE TIMES IN THE YEAR.

The peculiarities also of the squill and saffron deserve remark; for while all other plants put forth their leaves first, and then a round stem, these show the stem before the leaf makes its appearance: in the saffron, however, the blossom is protruded by the stem, but in the squill it is the stem that first makes its appearance, and then the flower emerges from it. This plant blossoms three times in the year, indicating thereby, as previously stated,[19] the three seasons for ploughing.

CHAP. 67.—THE CYPIROS. THE THESION.

Some authors reckon among the bulbs the root of the cypiros, or gladiolus;[20] it is a pleasant food, and when boiled and kneaded up with bread, makes it more agreeable to the taste, and at the same time more weighty. Not unlike it in appearance is the plant known to us as the "thesion,"[21] but it is of an acrid flavour.

CHAP. 68.—THE ASPHODEL, OR ROYAL SPEAR. THE ANTHERICUS OR ALBUCUS.

Other plants of the bulbous kind differ in the leaf: that of the asphodel[22] is long and narrow, that of the squill broad and supple, and the form of that of the gladiolus is bespoken by its name.[23] The asphodel is used as an article of food, the seed of it being parched, and the bulb roasted;[24] this last, however,

[17] See B. xxii. c. 31.

[18] From the Greek πικρὸς. [19] In B. xviii. c. 65.

[20] "Little sword:" the Gladiolus communis of Linnæus. See the remarks on the hyacinthus of the ancients in the Notes to c. 38 of this Book.

[21] Sprengel says that it is the Thesium linophyllum of modern botany; an opinion at which Fée expresses his surprise. See B. xxii. c. 31.

[22] The Asphodelus ramosus of Linnæus.

[23] "Little sword."

[24] It is no longer employed as an article of food.

should be cooked in hot ashes, and then eaten with salt and oil. It is beaten up also with figs, and forms, as Hesiod assures us, a very delicate dish. It is said, too, that the asphodel, planted before the doors of a farm-house, will act as a preservative against the effects of noxious spells.

Homer,[25] too, makes mention of the asphodel. The bulbs of it are like moderately-sized turnips, and there is no plant the root of which has more of them, as many as eighty bulbs being often grouped together. Theophrastus, and nearly all the Greek writers, with Pythagoras at the head of them, have given the name of "anthericos" to its stem, which is one cubit, and often two, in length, the leaves being very similar to those of the wild leek; it is to the root, or in other words, the bulbs, that they have given the name of asphodel. The people of our country call this plant[26] "albucus," and they give the name of "royal[27] spear" to the asphodel the stem of which bears berries,[28] thus distinguishing two[29] varieties of it. The albucus has a stalk a cubit in length, large, naked, and smooth, in reference to which, Mago recommends that it should be cut at the end of March and the beginning of April, the period at which it blossoms, and before the seed has begun to swell; he says, too, that the stalks should be split, and exposed on the fourth day in the sun, after which, when dry, they should be made up into bundles.

The same author states, also, that the Greeks give the name of "pistana" to the aquatic plant known to us as the "sagitta;"[30] and he recommends that it should be stripped of its bark, and dried in a mild sun, between the ides of May[31] and the end of October. He says, too, that it is usual to cut down to the root, throughout all the month of July, the variety of the gladiolus called "cypiros," which is a marsh-plant also, and at the end of three days to dry it in the sun, until it turns white; but that care must be taken every day to carry it under cover before sunset, the night dews being very injurious to marsh plants when cut.

[25] Od. xi. 539, and xxiv. 13.

[26] It is difficult to say to what "illud" refers, if, indeed, it is the correct reading.

[27] "Hastula regia."

[28] "Caulis acinosi."

[29] See B. xxii. c. 32.

[30] "Arrow." The Sagittaria sagittifolia of Linnæus; our arrow-head, or adder's tongue.

[31] 15th of May.

CHAP. 69. (18.)—SIX VARIETIES OF THE RUSH: FOUR REMEDIES DERIVED FROM THE CYPIROS.

Mago has likewise given similar recommendations as to the rush known to us as the "mariscus,"[32] and which is so extensively employed for weaving mats. He says that it should be gathered in the month of June, up to the middle of July, and for drying it he gives the same precepts that have been already[33] mentioned, in the appropriate place, when speaking of sedge. He describes a second kind, also, which I find is generally called the "marine" rush, and is known to the Greeks as the "oxyschœnos."[34]

Generally speaking, there are three varieties of this last rush: the pointed rush, which is barren, and by the Greeks is called the male rush and the "oxys:"[35] the female rush,[36] which bears a black seed, and is called the "melancranis,"[37] thicker and more bushy than the preceding one: and a third kind, called the "holoschœnus,"[38] which is larger still. Of these varieties, the melancranis grows separately from the others, but the oxys and the holoschœnus will grow upon the self-same clod. The holoschœnus is the most useful for all kinds of basket-work, being of a particularly supple and fleshy nature; it bears a fruit, which resembles eggs attached to one another. The rush, again, which we have spoken of as the male rush,[39] is reproduced from itself, the summit of it being bent down into the earth; the melancranis, however, is propagated from seed. Beyond this, the roots of all the varieties of the rush die every year.

The rush is in general use for making kipes[40] for sea-fishing,

[32] The Schœnus mariscus of Linnæus.

[33] Pliny is guilty of a lapsus memoriæ here, for he has nowhere given any such advice on the subject. Hardouin refers to B. xviii. c. 67, but erroneously, for there he is speaking of hay, not "ulva" or sedge.

[34] The "sharp rush." The Juncus acutus of Linnæus; the pointed bulrush.

[35] The "pointed" rush. The Schœnus mucronatus of Linnæus.

[36] A variety, Fée says, of the Schœnus nigricans of Linnæus, the black bulrush.

[37] The "black head."

[38] The Scirpus holoschœnus of Linnæus, Fée thinks.

[39] None of the rushes, Fée remarks, are barren; and when the head is inserted in the ground, it is neither more nor less than a sowing of the seed. Hardouin remarks, however, that by the word "cacumine," the bulbous root of the rush is meant, and not the point of the stem.

[40] "Nassæ." Baskets with a narrow mouth.

the more light and elegant kinds of basket-work, and the wicks of lamps, for which last purpose the pith is more particularly employed.[41] In the vicinity of the maritime Alps, the rushes grow to such a vast size, that when split they measure nearly an inch in diameter; while in Egypt, on the other hand, they are so extremely fine, that the people there make sieves of them, for which, indeed, there can be nothing better.

Some authors, again, distinguish another kind of rush, of a triangular shape, to which they give the name of cyperos,[42] though many persons make no distinction between it and the "cypiros," in consequence of the resemblance of the names; for our own part, however, we shall observe the distinction. The cypiros, as we have already[43] stated, is identical with the gladiolus, a plant with a bulbous root, the most esteemed being those grown in the Isle of Crete, the next best those of Naxos, and the next those of Phœnicia. The cypiros of Crete is white, with an odour strongly resembling that of nard; the produce of Naxos has a more pungent smell, that of Phœnicia, but little odour of any kind, and that of Ægypt none at all; for it grows in that country as well.

This plant disperses hard tumours of the body—for we shall here begin to speak of the remedies derived from the various flowers and odoriferous plants, they being, all of them, of very considerable utility in medicine. As to the cypiros, then, I shall follow Apollodorus, who forbids it to be taken in drink, though at the same time he admits that it is extremely useful for calculi of the bladder, and recommends it in fomentations for the face. He entertains no doubt, however, that it is productive of abortion, and he mentions, as a remarkable fact, that the barbarians,[44] by inhaling the fumes of this plant at the mouth, thereby diminish the volume of the spleen. They never go out of the house, he says, till they have inhaled these

[41] It has descended in our time to the more humble rushlight; and even that is fast "going out."

[42] Fée identifies it with the Cyperus longus and Cyperus rotundus of Linnæus, the odoriferous or round souchet.

[43] In c. 67 of this Book. The bulb, however, of the gladiolus is inodorous; for which reason Fée is inclined to think that Pliny, with all his care, is describing a cyperus, perhaps the Cyperus esculentus.

[44] It would be curious to know who these barbarians were, who thus *smoked* cypirus as we do tobacco. Fée queries whether they were Germans or Gauls, people of Asia or of Africa.

fumes, through the agency of which they daily become stronger and stronger, and more robust. He states, also, that the cypiros, employed as a liniment with oil, is an undoubted remedy for chafing of the skin, and offensive odours of the arm-pits.

CHAP. 70.—THE CYPEROS: FOURTEEN REMEDIES. THE CYPERIS. THE CYPIRA.

The cyperos, as we have just stated, is a rush of angular shape, white near the ground, and black and solid at the top. The lower leaves are more slender than those of the leek, and those at the top are small, with the seed of the plant lying between them. The root resembles a black olive,[45] and when it is of an oblong shape, the plant is known as the "cyperis,"[46] being employed in medicine to a great extent. The cyperos most highly esteemed is that of the vicinity of the Temple of Jupiter Hammon, the next best being that of Rhodes, the next that of Theræ, and the worst of all that of Egypt, a circumstance which tends greatly to add to the misunderstanding on the subject, as that country produces the cypiros as well: but the cypiros which grows there is extremely hard, and has hardly any smell at all, while all the other[47] varieties of it have an odour strongly resembling that of nard.

There is also an Indian plant, called the "cypira,"[48] of a totally different character, and similar to ginger in appearance; when chewed, it has exactly the flavour of saffron.

The cyperos, employed medicinally, is possessed of certain depilatory properties. It is used in liniments for hang-nails and ulcerous sores of the genitals and of all parts of the body which are of a humid nature, ulcers of the mouth, for instance. The root of it is a very efficacious remedy for the stings of serpents and scorpions. Taken in drink, it removes obstructions of the uterus, but if employed in too large doses, it is liable to cause prolapsus of that organ. It acts also as a diuretic, and expels calculi of the bladder; properties which render it extremely useful in dropsy. It is employed topically, also, for

[45] This applies more particularly, Fée thinks, to the Cyperus rotundus of Linnæus.

[46] The Cyperus longus of Linnæus, Fée thinks.

[47] Sillig finds a difficulty here which does not seem to exist. It is pretty clear that "cæteris" refers to the other varieties of the cypiros, mentioned in the preceding Chapter.

[48] It has not been identified.

serpiginous ulcers, those of the throat more particularly, being usually applied with wine or vinegar.

CHAP. 71.—THE HOLOSCHŒNUS.

The root of the rush, boiled down to one third in three heminæ of water, is a cure for cough; the seed of it, parched and taken in water, arrests looseness of the bowels and the menstrual discharge, though at the same time it causes headache. The name given to this rush is holoschœnus; the parts of it nearest the root are chewed, as a cure for the bites of spiders.

I find mention made, also, of one other kind of rush, the name of which is "euripice;"[49] the seed, they say, is narcotic, but the greatest care is necessary, not to throw the patient into a lethargy.

CHAP. 72.—TEN REMEDIES DERIVED FROM THE SWEET-SCENTED RUSH, OR TEUCHITES.

We will also take this opportunity of mentioning the medicinal properties of the sweet-scented rush, which is found in Cœle-Syria, as already stated by us in the appropriate place.[50] The most esteemed kind, however, is that which grows in the country of the Nabatæi, and is known as the "teuchites;"[51] the next best being the produce of Babylonia, and the very worst that of Africa, which is entirely destitute of smell. This rush is round, and when applied to the tongue, has a pungent, vinous flavour. The genuine kind, when rubbed, gives out an odour like that of the rose, and when broken asunder it is red within. It dispels flatulency, and hence it is very good for the stomach, and for persons when vomiting the bile or blood. It arrests hiccup also, promotes eructations, acts as a diuretic, and is curative of affections of the bladder. A decoction of it is used for female complaints; and in cases of opisthotony, it is applied in plasters with dry resin, these being highly valued for their warming properties.

CHAP. 73.—REMEDIES DERIVED FROM THE FLOWERS BEFORE MENTIONED: THIRTY-TWO REMEDIES DERIVED FROM THE ROSE.

The rose is of an astringent and refreshing nature. For

[49] Mentioned also by Dioscorides. It has not been identified.

[50] B. xii. c. 48.

[51] Dioscorides says that it grows in Babylonia. It is a variety, no doubt, of the Andropogon schœnanthus.

medicinal purposes the petals, the flowers, and the heads are used. Those portions of the petals which are quite white are known as the unglets.[52] In the flower there is the seed, as distinguished from the filaments, and in the head there is the bud,[53] as well as the calyx. The petals are dried, or else the juice is extracted from them, by one of the three following methods: Either the leaves are employed whole for the purpose, the unglets not being removed—for these are the parts, in fact, that contain the most juice—or else the unglets are first taken off and the residue is then macerated with oil or wine, in glass vessels placed in the sun. Some persons add salt as well, and others alkanet,[54] or else aspalathus or sweet-scented rush; as it is, when thus prepared, a very valuable remedy for diseases of the uterus and for dysentery. According to the third process, the unglets are removed from the petals, and pounded, after which they are subjected to pressure in a coarse linen cloth, the juice being received in a copper vessel; it is then boiled on a slow fire, until it has acquired the consistence of honey; for this purpose, however, the most odoriferous of the petals should be selected.

(19.) We have already stated,[55] when speaking of the various kinds of wines, how rose wine is made. Rose juice is much used in injections for the ears, and as a gargle for ulcerations of the mouth, and for the gums and tonsils; it is employed also for the stomach, maladies of the uterus, diseases of the rectum, and for head-ache. In fevers, it is used, either by itself or in combination with vinegar, as a remedy for sleeplessness and nausea. The petals, charred, are used as a cosmetic for the eyebrows;[56] and the thighs, when chafed, are rubbed with them dried; reduced to powder, too, they are soothing for defluxions of the eyes. The flower of the rose is soporific, and taken in oxycrate it arrests fluxes in females, the white flux in particular; also spitting of blood, and pains in the stomach, if taken in three cyathi of wine, in sufficient quantity to flavour it.

As to the seed of the rose, the best is that which is of a saffron colour, and not more than a year old; it should be dried,

[52] "Ungues," "nails;" in allusion to the white part of the finger-nails.

[53] "Cortex."

[54] "Anchusam."

[55] In B. xiv. c. 19.

[56] "In calliblepharum."

too, in the shade. The black seed is worthless. In cases of tooth-ache, the seed is employed in the form of a liniment; it acts also as a diuretic, and is used as a topical application for the stomach, as also in cases of erysipelas which are not inveterate: inhaled at the nostrils, it has the effect of clearing the brain. The heads of roses, taken in drink, arrest looseness of the bowels and hæmorrhage. The unglets of the rose are wholesome in cases of defluxion of the eyes; but the rose is very apt to taint all ulcerous sores of the eyes, if it is not applied at the very beginning of the defluxion, dried, and in combination with bread. The petals, too, taken internally, are extremely wholesome for gnawing pains of the stomach, and for maladies of the abdomen or intestines; as also for the thoracic organs, if applied externally even: they are preserved, too, for eating, in a similar manner to lapathum. Great care must be taken in drying rose-leaves, as they are apt to turn mouldy very quickly.

The petals, too, from which the juice has been extracted, may be put to some use when dried: powders,[57] for instance, may be made from them, for the purpose of checking the perspiration. These powders are sprinkled on the body, upon leaving the bath, and are left to dry on it, after which they are washed off with cold water. The little excrescences[58] of the wild rose, mixed with bears'-grease,[59] are a good remedy for alopecy.

CHAP. 74.—TWENTY-ONE REMEDIES DERIVED FROM THE LILY.

The roots of the lily[59*] ennoble that flower in manifold ways by their utility in a medicinal point of view. Taken in wine, they are good for the stings of serpents, and in cases of poisoning by fungi. For corns on the feet, they are applied boiled

[57] "Diapasmata."

[58] "Pilulæ." He alludes to the galls produced by an insect of the Cynips kind, and known as "bedeguar." They are astringent, but no longer employed in medicine.

[59] The efficacy of bears'-grease for promoting the growth of the hair was believed in, we find, so early as Pliny's time.

[59*] See c. 11 of this Book. The bulbs of the lily contain a mucilage, and roasted or boiled they are sometimes employed, Fée says, to bring inflammations to a head. Employed internally, he thinks that they would be of no use whatever, and there is nothing in their composition, he says, which would induce one to think that they might be employed to advantage in most of the cases mentioned by Pliny.

in wine, not being taken off before the end of three days. A decoction of them with grease or oil, has the effect of making the hair grow again upon burns. Taken with honied wine, they carry off corrupt blood by stool; they are good, also, for the spleen and for hernia, and act as an emmenagogue. Boiled in wine and applied with honey, they are curative of wounds of the sinews. They are good, too, for lichens, leprous sores, and scurf upon the face, and they efface wrinkles of the body.

The petals of the lily are boiled in vinegar, and applied, in combination with polium,[60] to wounds; if it should happen, however, to be a wound of the testes, it is the best plan to apply the other ingredients with henbane and wheat-meal. Lily-seed is applied in cases of erysipelas, and the flowers and leaves are used as a cataplasm for inveterate ulcers. The juice which is extracted from the flower is called "honey"[61] by some persons, and "syrium" by others; it is employed as an emollient for the uterus, and is also used for the purpose of promoting perspirations, and for bringing suppurations to a head.

CHAP. 75.—SIXTEEN REMEDIES DERIVED FROM THE NARCISSUS.

Two varieties of the narcissus are employed in medicine, the one with a purple[62] flower, and the herbaceous narcissus.[63] This last is injurious to the stomach, and hence it is that it acts both as an emetic and as a purgative: it is prejudicial, also, to the sinews, and produces dull, heavy pains in the head: hence it is that it has received its name, from "narce,"[64] and not from the youth Narcissus, mentioned in fable. The roots of both kinds of narcissus have a flavour resembling that of wine mixed with honey. This plant is very useful, applied to burns with a little honey, as also to other kinds of wounds, and sprains. Applied topically, too, with honey and oatmeal, it is good for tumours, and it is similarly employed for the extraction of foreign substances from the body.

Beaten up in polenta and oil it effects the cure of contusions and blows inflicted by stones; and, mixed with meal,

[60] Or "Poley." See c. 21 of this Book.

[61] "Mel."

[62] See c. 12 of this Book.

[63] The Narcissus pseudo-narcissus of Linnæus, the meadow narcissus, or daffodil. The epithet "herbaceous," Fée says, applies, not to the flower, but to the leaves, which are larger and greener than in the other kinds.

[64] "Torpor," or "lethargy."

it effectually cleanses wounds, and speedily removes black morphews from the skin. Of this flower oil of narcissus is made, good for softening indurations of the skin, and for warming parts of the body that have been frost-bitten. It is very beneficial, also, for the ears, but is very apt to produce head-ache.

CHAP. 76.—SEVENTEEN REMEDIES DERIVED FROM THE VIOLET.

There are both wild and cultivated violets.[65] The purple violet is of a cooling nature: for inflammations they are applied to the stomach in the burning heats, and for pains in the head they are applied to the forehead. Violets, in particular, are used for defluxions of the eyes, prolapsus of the fundament and uterus, and suppurations. Worn in chaplets upon the head, or even smelt at, they dispel the fumes of wine and head-ache; and, taken in water, they are a cure for quinsy. The purple violet, taken in water, is a remedy for epilepsy, in children more particularly: violet seed is good for the stings of scorpions.

On the other hand, the flower of the white violet opens suppurations, and the plant itself disperses them. Both the white and the yellow violet check the menstrual discharge, and act as diuretics. When fresh gathered, they have less virtue, and hence it is that they are mostly used dry, after being kept a year. The yellow violet, taken in doses of half a cyathus to three cyathi of water, promotes the catamenia; and the roots of it, applied with vinegar, assuage affections of the spleen, as also the gout. Mixed with myrrh and saffron, they are good for inflammation of the eyes. The leaves, applied with honey, cleanse ulcerous sores of the head, and, combined with cerate,[66] they are good for chaps of the fundament and other moist parts of the body. Employed with vinegar, they effect the cure of abscesses.

CHAP. 77.—SEVENTEEN REMEDIES DERIVED FROM THE BACCHAR. ONE REMEDY DERIVED FROM THE COMBRETUM.

The bacchar that is used in medicine is by some of our writers called the "perpressa." It is very useful for the stings of serpents, head-ache and burning heats in the head, and

[65] See c. 14 of this Book.

[66] An ointment made of wax and oil.

for defluxions of the eyes. It is applied topically for swellings of the mamillæ after delivery, as also incipient fistulas[67] of the eyes, and erysipelas; the smell of it induces sleep. It is found very beneficial to administer a decoction of the root for spasms, falls with violence, convulsions, and asthma. For an inveterate cough, three or four roots of this plant are boiled down to one-third; this decoction acting also as a purgative for women after miscarriage, and removing stitch in the side, and calculi of the bladder. Drying powders[68] for perspiration are prepared also from this plant; and it is laid among garments for the smell.[69] The combretum which we have spoken[70] of as resembling the bacchar, beaten up with axle-grease, is a marvellous cure for wounds.

CHAP. 78.—EIGHT REMEDIES DERIVED FROM ASARUM.

It is generally stated that asarum[71] is good for affections of the liver, taken in doses of one ounce to a semisextarius of honied wine mixed with water. It purges the bowels like hellebore, and is good for dropsy and affections of the thoracic organs and uterus, as also for jaundice. When mixed with must, it makes a wine with strongly diuretic qualities. It is taken up as soon as it begins to put forth its leaves, and is dried in the shade. It is apt however to turn mouldy very speedily.

CHAP. 79. (20.)—EIGHT REMEDIES DERIVED FROM GALLIC NARD.

Some authors, as we have already[72] stated, having given the name of "field nard" to the root of the bacchar, we will here mention the medicinal properties of Gallic nard, of which we have [73] already spoken, when treating of the foreign trees, deferring further notice of it till the present occasion. In doses of two drachmæ, taken in wine, it is good for the stings of serpents; and taken in water or in wine it is employed for inflations of the colon, maladies of the liver or kidneys, and suffusions of the gall. Employed by itself or in combination

[67] "Ægilopiis." [68] "Diapasmata."

[69] This, as Fée remarks, can hardly apply to the Digitalis purpurea of Linnæus, with which he has identified it, the smell of which is disagreeable rather than otherwise.

[70] In c. 16 of this Book.

[71] The Asarum Europæum of Linnæus; our foalfoot. See B. xii. c. 27.

[72] In c. 16 of this Book.

[73] In B. xii. c. 26.

with wormwood it is good for dropsy. It has the property, also, of arresting excessive discharges of the catamenia.

CHAP. 80.—FOUR REMEDIES DERIVED FROM THE PLANT CALLED "PHU."

The root of the plant which we have mentioned in the same place under the name of "phu,"[74] is given in drink, either bruised or boiled, in cases of hysterical suffocation, and for pains of the chest or sides. It acts as an emmenagogue, and is generally taken in wine.

CHAP. 81.—TWENTY REMEDIES DERIVED FROM SAFFRON.

Saffron does not blend well with honey, or, indeed, with any sweet substance, though very readily with wine or water: it is extremely useful in medicine, and is generally kept in horn boxes. Applied with egg it disperses all kinds of inflammation, those of the eyes in particular: it is employed also for hysterical suffocations, and for ulcerations of the stomach, chest, kidneys, liver, lungs, and bladder. It is particularly useful also in cases of inflammation of those parts, and for cough and pleurisy. It likewise removes itching[75] sensations, and acts as a diuretic. Persons who have used the precaution of first taking saffron in drink will never experience surfeit or headache, and will be proof against inebriation. Chaplets too, made of saffron, and worn on the head, tend to dispel the fumes of wine. The flower of it is employed topically with Cimolian[76] chalk for erysipelas. It is used also in the composition of numerous other medicaments.

CHAP. 82.—SYRIAN CROCOMAGNA: TWO REMEDIES.

There is also an eye-salve[77] which is indebted to this plant for its name. The lees[78] of the extract of saffron, employed in the saffron unguent known as "crocomagma," have their own peculiar utility in cases of cataract and strangury. These lees

[74] B. xii. c. 26. Either the Valeriana Italica, Fée says, or the Valeriana Dioscoridis of Sibthorpe. The Valeriana phu and the Valeriana officinalis of Linnæus have been suggested by some commentators.

[75] Or "prurigo."

[76] See B. xxxv. cc. 18 and 57.

[77] "Collyrium." Saffron is still the base of certain eye-salves.

[78] Formed, most probably, of all the insoluble substances contained in the oil employed in making the "unguentum crocinum."

are of a more warming nature than saffron itself; the best kind is that which, when put into the mouth, stains the teeth and saliva the colour of saffron.

CHAP. 83.—FORTY-ONE REMEDIES DERIVED FROM THE IRIS: TWO REMEDIES DERIVED FROM THE SALIUNCA.

The red iris is better than the white one. It is very beneficial to attach this plant to the bodies of infants more particularly when they are cutting their teeth, or are suffering from cough; it is equally good, too, to inject a few drops of it when children are suffering from tape-worm. The other properties of it differ but very little from those of honey. It cleanses ulcerous sores of the head, and inveterate abscesses more particularly. Taken in doses of two drachmæ with honey, it relaxes the bowels; and an infusion of it is good for cough, gripings of the stomach, and flatulency: taken with vinegar, too, it cures affections of the spleen. Mixed with oxycrate it is good for the bites of serpents and spiders, and, in doses of two drachmæ with bread or water, it is employed for the cure of the stings of scorpions. It is applied also topically with oil to the bites of dogs, and to parts that are excoriated: employed in a similar manner, too, it is good for pains in the sinews, and in combination with resin it is used as a liniment for lumbago and sciatica. The properties of this plant are of a warming nature. Inhaled at the nostrils, it produces sneezing and cleanses the brain, and in cases of head-ache it is applied topically in combination with the quince or the strutheum.[79] It dispels the fumes of wine also, and difficulties of breathing[80] and taken in doses of two oboli it acts as an emetic: applied as a plaster with honey, it extracts splinters of broken bones. Powdered iris is employed also for whitlows, and, mixed with wine, for corns and warts, in which case it is left for three days on the part affected.

Chewed, it is a corrective of bad breath and offensive exhalations of the arm-pits, and the juice of it softens all kinds of indurations of the body. This plant acts as a soporific, but it wastes the seminal fluids: it is used also for the treatment of chaps of the fundament and condylomata, and it heals all sorts of excrescences on the body.

[79] A small kind of quince. See B. xv. cc. 10 and 14.
[80] "Orthopnœa."

Some persons give the name of "xyris"[81] to the wild iris. This plant disperses scrofulous sores, as well as tumours and inguinal swellings; but it is generally recommended that when wanted for these purposes it should be pulled up with the left hand, the party gathering it mentioning the name of the patient and of the disease for which it is intended to be employed. While speaking of this subject, I will take the opportunity of disclosing the criminal practices of some herbalists—they keep back a portion of the iris, and of some other plants as well, the plantago for instance, and, if they think that they have not been sufficiently well paid and wish to be employed a second time, bury the part they have kept back in the same place; their object being, I suppose,[82] to revive the malady which has just been cured.

The root of the saliunca[83] boiled in wine, arrests vomiting and strengthens the stomach.

CHAP. 84.—EIGHTEEN REMEDIES DERIVED FROM THE POLIUM.

Those persons, according to Musæus and Hesiod, who are desirous of gaining honour and glory, should rub the body all over with polium,[84] and handle and cultivate it as much as possible. They say, too, that it should be kept about the person as an antidote to poison, and that to keep serpents away it should be strewed beneath the bed, burnt, or else carried on the person; decoctions of it in wine, either fresh-gathered or dried, should be used too as a liniment for the body. Medical men prescribe it in vinegar for affections of the spleen, and in wine for the jaundice; a decoction of it in wine is recommended also for incipient dropsy; and in this way too, it is employed as a liniment for wounds. This plant has the effect of bringing away the after-birth and the dead fœtus, and of dispelling pains in various parts of the body: it empties the bladder also, and is employed in liniments for defluxions of the eyes. In-

[81] The Iris fœtidissima of Linnæus. It grows near Constantinople, and the smell of it is so like that of roast meat, that it is commonly called, Fée says, the "leg of mutton iris."

[82] "Credo." It does not exactly appear that Pliny puts faith in this superstition, as Fée and Desfontaines seem to think; but he merely hazards a supposition as to what are the intentions of these avaricious herbalists.

[83] See c. 20 of this Book.

[84] See c. 21 of this Book. Fée remarks, that in reality it possesses none of the qualities that are attributed to it.

deed, there is no plant known that better deserves to form an ingredient in the medicament known to us as the "alexipharmacon:"[85] though there are some who say that it is injurious to the stomach and is apt to stuff the head, and that it produces abortion—assertions which[86] others, again, totally deny.

There is a superstitious observance also, to the effect that, for cataract, it ought to be attached to the neck the moment it is found, every precaution being taken not to let it touch the ground. The same persons state too that the leaves of it are similar to those of thyme, except that they are softer and more white and downy. Beaten up with wild rue in rain water, it is said to assuage the pain of the sting of the asp; it is quite as astringent too as the flower[87] of the pomegranate, and as efficacious for closing wounds and preventing them from spreading.

CHAP. 85.—THREE REMEDIES DERIVED FROM THE HOLOCHRYSOS. SIX REMEDIES DERIVED FROM THE CHRYSOCOME.

The holochrysos,[88] taken in wine, is a cure for strangury, and it is employed in liniments for defluxions of the eyes. Mixed with burnt lees of wine and polenta, it is curative of lichens.

The root of the chrysocome[89] is warming and astringent; it is taken in drink for affections of the liver and lungs, and a decoction of it in hydromel is good for pains of the uterus. It acts as an emmenagogue also, and, administered raw, draws off the water in dropsy.

CHAP. 86.—TWENTY-ONE REMEDIES DERIVED FROM MELISSOPHYLLUM.

If the bee-hives are rubbed all over with melissophyllum[90]

[85] The "protection against poisons."

[86] We have adopted Sillig's emendation of this passage; the words "aiunt, quod alii" being evidently required by the context.

[87] "Cytinus" appears to be a preferable reading here to "cyanus," the "blue-bell."

[88] See c. 24 of this Book. Its medicinal properties, Fée says, are next to nothing.

[89] See c. 26 of this Book. If it is the Chrysocoma linosyris, it has no peculiar medicinal properties, Fée says. All these statements are found in Dioscorides.

[90] See B. xx. c. 45, and c. 41 of this Book. It is a plant of somewhat stimulating properties, and may possibly be useful, Fée thinks, for nervous affections.

or melittæna, the bees will never desert them; for there is no flower in which they take greater delight. If branches[91] of this plant are used, the bees may be kept within bounds without any difficulty. It is an excellent remedy, also, for the stings of bees, wasps, and similar insects, as also for wounds made by spiders and scorpions; it is used, too, for hysterical suffocations, in combination with nitre, and for gripings of the bowels, with wine. The leaves of it are employed topically for scrofulous sores, and, in combination with salt, for maladies of the fundament. A decoction of the juice promotes the menstrual discharge, dispels inflammations, and heals ulcerous sores: it is good, too, for diseases of the joints and the bites of dogs, and is beneficial in cases of inveterate dysentery, and for cœliac affections, hardness of breathing, diseases of the spleen, and ulcerations of the thoracic organs. For films on the eyes, it is considered a most excellent plan to anoint them with the juice of this plant mixed with honey.

CHAP. 87.—THIRTEEN REMEDIES DERIVED FROM THE MELILOTE.

The melilote,[92] again, applied with the yolk of an egg, or else linseed, effects the cure of diseases of the eyes. It assuages pains, too, in the jaws and head, applied with rose oil; and, employed with raisin wine, it is good for pains in the ears, and all kinds of swellings or eruptions on the hands. A decoction of it in wine, or else the plant itself beaten up raw, is good for pains in the stomach. It is equally beneficial, too, for maladies of the uterus; and for diseases of the testes, prolapsus of the fundament, and all other diseases of those parts, a decoction is made of it, fresh-gathered, in water or in raisin wine. With the addition of rose oil, it is used as a liniment for carcinoma. Boiled in sweet wine, it is particularly useful for the treatment of the ulcers known as "melicerides."[93]

CHAP. 88. (21.)—FOUR REMEDIES DERIVED FROM TREFOIL.

The trefoil,[94] I know, is generally looked upon as being par-

[91] "Scopis." He may possibly mean small brooms made of the sprigs of the plant.

[92] See c. 29 of this Book. The melilote is possessed of no peculiar energy, but decoctions of it are sometimes employed as a lotion.

[93] Sores "resembling a honey-comb."

[94] See c. 30 of this Book.

ticularly good for the stings of serpents and scorpions, the seed being taken in doses of twenty grains, with either wine or oxycrate; or else the leaves and the plant itself are boiled together, and a decoction made of them; indeed, it is stated, that a serpent is never to be seen among trefoil. Celebrated authors, too, I find, have asserted that twenty-five grains of the seed of the kind of trefoil which we have[95] spoken of as the "minyanthes," are a sufficient antidote for all kinds of poisons: in addition to which, there are numerous other remedial virtues ascribed to it.

But these notions, in my opinion, are counterbalanced by the authority of a writer of the very highest repute: for we find the poet Sophocles asserting that the trefoil is a venomous plant. Simus, too, the physician, maintains that a decoction of it, or the juice, poured upon the human body, is productive of burning sensations similar to those experienced by persons when they have been stung by a serpent and have trefoil applied to the wound. It is my opinion, then, that trefoil should never be used in any other capacity than as a counter-poison; for it is not improbable that the venom of this plant has a natural antipathy to all other kinds of poisons, a phænomenon which has been observed in many other cases as well. I find it stated, also, that the seed of the trefoil with an extremely diminutive leaf, applied in washes to the face, is extremely beneficial for preserving the freshness of the skin in females.

CHAP. 89.—TWENTY-EIGHT REMEDIES DERIVED FROM THYME.

Thyme[96] should be gathered while it is in flower, and dried in the shade. There are two kinds of thyme: the white thyme with a ligneous root, which grows upon declivities, and is the most esteemed of the two, and another variety, which is of a darker colour, and bears a swarthy flower. They are, both of them, considered to be extremely beneficial to the sight, whether used as an article of food or as a medicament, and to be good for inveterate coughs. Used as an electuary, with vinegar and salt, they facilitate expectoration, and taken with honey, they prevent the blood from coagulating. Applied ex-

[95] In c. 30 of this Book.

[96] See c. 31 of this Book. Thyme yields an essential oil, possessed of stimulating properties. Most of the assertions here made as to its virtues are quite unfounded.

ternally with mustard, they dispel chronic fluxes of the fauces, as well as various affections of the stomach and bowels. Still, however, these plants must be used in moderation, as they are of a heating nature, for which reason it is that they act so astringently upon the bowels. In cases of ulceration of the intestines, the dose should be one denarius of thyme to one sextarius of oxymel; the same proportions, too, should be taken for pains in the sides, between the shoulder-blades, or in the thoracic organs. Taken with oxymel, these plants are used for the cure of intestinal diseases, and a similar draught is administered in cases of alienation of the senses and melancholy.

Thyme is given also for epilepsy, when the fits come on, the smell of it reviving the patient; it is said, too, that epileptic persons should sleep upon soft thyme. It is good, also, for hardness of breathing, and for asthma and obstructions of the catamenia. A decoction of thyme in water, boiled down to one-third, brings away the dead fœtus, and it is given to males with oxymel, as a remedy for flatulency, and in cases of swelling of the abdomen or testes and of pains in the bladder. Applied with wine, it removes tumours and fluxes, and, in combination with vinegar, callosities and warts. Mixed with wine, it is used as an external application for sciatica; and, beaten up with oil and sprinkled upon wool, it is employed for diseases of the joints, and for sprains. It is applied, also, to burns, mixed with hogs' lard. For maladies of the joints of recent date, thyme is administered in drink, in doses of three oboli to three cyathi of oxymel. For loss of appetite, it is given, beaten up with salt.

CHAP. 90.—FOUR REMEDIES DERIVED FROM THE HEMEROCALLES.

The hemerocalles[97] has a soft, pale green leaf, with an odoriferous, bulbous root. This root, applied with honey to the abdomen, draws off the aqueous humours and all corrupt blood. The leaves of it are applied for defluxions of the eyes, and for pains in the mamillæ, after childbirth.

CHAP. 91.—FIVE REMEDIES DERIVED FROM THE HELENIUM.

The helenium, which springs, as we have already[98] stated,

[97] See c. 33 of this Book. The Pancratium maritimum, if that plant is identical with it, is but little used, but has a marked action, Fée says, upon the human frame.

[98] In c. 33 of this Book.

from the tears of Helena, is generally thought to have been produced for improving the appearance, and to maintain unimpaired the freshness of the skin in females, both of the face and of other parts of the body. Besides this, it is generally supposed that the use of it confers additional graces on the person, and ensures universal attraction. They say, too, that, taken with wine, it promotes gaiety of spirit, having, in fact, a similar effect to the nepenthes, which has been so much vaunted by Homer,[99] as producing forgetfulness of all sorrow. The juice of this plant is remarkably sweet, and the root of it, taken fasting in water, is good for hardness of breathing; it is white within, and sweet. An infusion of it is taken in wine for the stings of serpents; and the plant, bruised, it is said, will kill mice.

CHAP. 92.—TWENTY-TWO REMEDIES DERIVED FROM THE ABROTONUM.

We find two varieties of abrotonum[1] mentioned, the field, and the mountain kind; this last, it is generally understood, is the female plant, the other the male. They are both of them bitter, like wormwood. That of Sicily is the most esteemed, and next to it, that of Galatia. The leaves of it are sometimes employed, but it is the seed that possesses the most warming

[99] Od. iv. l. 221. This has been supposed by many commentators to have been opium. The origin of the word is *νή*, "not," and *πένθος*, "grief;" and, as Fée says, it would seem to indicate rather a composition than a plant. Saffron, mandragore, nightshade, and even tea and coffee, have been suggested by the active imaginations of various writers. Fée is of opinion that it is impossible to come to any satisfactory conclusion, but inclines to the belief that either the poppy or a preparation from it, is meant. In confirmation of this opinion, it is a singular fact, that, as Dr. Paris remarks (in his Pharmacologia), the Nepenthes of Homer was obtained from Thebes in Egypt, and that tincture of opium, or laudanum, has received the name of "Thebaic tincture." Gorræus, in his "Definitiones Medicæ," thinks that the herb alluded to is the Inula Campania, or Elecampane, which was also said to have derived its name of "Helenium" from Helen. Dr. Greenhill, in Smith's Dictionary of Antiquities, inclines to the opinion that it was opium. See the article "Pharmaceutica."

[1] See c. 34 of this Book. Both of the plants mentioned share the medicinal properties of wormwood, being stimulants, tonics, anthelmintics, and febrifuges. It would be dangerous, however, Fée says, to administer them in most of the cases mentioned by Pliny, nor would they be good for strangury, or affections of the chest.

properties; hence it is, that it is so beneficial for maladies of the sinews,[2] for cough, hardness of breathing, convulsions, ruptures, lumbago, and strangury. Several handfuls of this plant are boiled down to one-third, and the decoction of it, in doses of four cyathi, is administered in drink. The seed is given, pounded, in water, in doses of one drachma; it is very good for affections of the uterus.

Mixed with barley-meal, this plant brings tumours to a head, and boiled with quinces, it is employed as a liniment for inflammations of the eyes. It keeps away serpents, and for their stings it is either taken in wine, or else employed in combination with it as a liniment. It is extremely efficacious, also, for the stings of those noxious insects by which shivering fits and chills are produced, such as the scorpion and the spider called "phalangium,"[3] for example; taken in a potion, it is good for other kinds of poison, as also for shivering fits, however produced, and for the extraction of foreign substances adhering to the flesh; it has the effect, also, of expelling intestinal worms. It is stated that a sprig of this plant, if put beneath the pillow, will act as an aphrodisiac, and that it is of the very greatest efficacy against all those charms and spells by which impotence is produced.

CHAP. 93. (22.)—ONE REMEDY DERIVED FROM THE LEUCANTHEMUM. NINE REMEDIES DERIVED FROM THE AMARACUS.

The leucanthemum,[4] mixed with two-thirds of vinegar, is curative of asthma. The sampsuchum or amaracus,[5]—that of Cyprus being the most highly esteemed, and possessed of the finest smell—is a remedy for the stings of scorpions, applied to the wound with vinegar and salt. Used as a pessary, too, it is very beneficial in cases of menstrual derangement; but when taken in drink, its properties are not so powerfully developed. Used with polenta, it heals defluxions of the eyes; and the juice of it, boiled, dispels gripings of the stomach. It is useful, too, for strangury and dropsy; and in a dry state, it promotes sneezing. There is an oil extracted from it, known

[2] "Nervis." Pliny had no knowledge, probably, of the nervous system; but Fée seems to think that such is his meaning here. See B. xi. c. 88.

[3] See B. xi. cc. 24, 28, and 29.

[4] See c. 34 of this Book; also B. xxii. c. 26.

[5] See c. 35 of this Book.

as "sampsuchinum," or "amaracinum," which is very good for warming and softening the sinews; it has a warming effect, also, upon the uterus. The leaves are good for bruises, beaten up with honey, and, mixed with wax, for sprains.

CHAP. 94. (23.)—TEN REMEDIES DERIVED FROM THE ANEMONE OR PHRENION.

We have as yet spoken[6] only of the anemone used for making chaplets; we will now proceed to describe those kinds which are employed for medicinal purposes. Some persons give the name of "phrenion" to this plant: there are two species of it; one of which is wild,[7] and the other grows on cultivated[8] spots; though they are, both of them, attached to a sandy soil. Of the cultivated anemone there are numerous varieties; some, and these are the most abundant, have a scarlet flower, while others, again, have a flower that is purple or else milk-white. The leaves of all these three kinds bear a strong resemblance to parsley, and it is not often that they exceed half a foot in height, the head being very similar to that of asparagus. The flower never opens, except while the wind is blowing, a circumstance to which it owes its name.[9] The wild anemone is larger than the cultivated one, and has broader leaves, with a scarlet flower.

Some persons erroneously take the wild anemone to be the same as the argemone,[10] while others, again, identify it with the poppy which we have mentioned[11] under the name of "rhœas:" there is, however, a great difference between them, as these two other plants blossom later than the anemone, nor does the anemone possess a juice or a calyx like theirs; besides which, it terminates in a head like that of asparagus.

The various kinds of anemone are good for pains and inflammations of the head, diseases of the uterus, and stoppage of the milk in females; taken, too, in a ptisan, or applied as a pessary in wool, they promote the menstrual discharge. The root, chewed, has a tendency to bring away the phlegm, and

[6] In c. 38 of this Book.

[7] The Anemone coronaria of Linnæus, Fée thinks.

[8] Probably the Adonis æstivalis of Linnæus, a ranunculus. These plants are of an acrid, irritating nature, and rank at the present day among the vegetable poisons.

[9] The "wind-flower," from the Greek ἄνεμος, "wind."

[10] See B. xxv. c. 26.

[11] In B. xix. c. 53.

is a cure for tooth-ache: a decoction of it is good, too, for defluxions of the eyes,[12] and effaces the scars left by wounds. The Magi have attributed many very wonderful properties to these plants: they recommend it to be gathered at the earliest moment in the year that it is seen, and certain words to be repeated, to the effect that it is being gathered as a remedy for tertian and quartan fevers; after which the flower must be wrapped up in red cloth and kept in the shade, in order to be attached to the person when wanted. The root of the anemone with a scarlet flower, beaten up and applied to the body of any animated being,[13] produces an ulcer there by the agency of its acrid qualities; hence it is that it is so much employed as a detergent for ulcerous sores.

CHAP. 95. (24.)—SIX REMEDIES DERIVED FROM THE ŒNANTHE.

The œnanthe[14] is a plant which is found growing upon rocks, has the leaf of the parsnip, and a large root with numerous fibres. The stalk of it and the leaves, taken with honey and black wine, facilitate delivery and bring away the after-birth: taken with honey, also, they are a cure for cough, and act as a powerful diuretic. The root of this plant is curative of diseases of the bladder.

CHAP. 96. (25.)—ELEVEN REMEDIES DERIVED FROM THE HELICHRYSOS.

The helichrysos is by some persons called the "chrysanthemon."[14*] It has small, white branches, with leaves of a whitish colour, similar to those of the abrotonum. The clusters, disposed around it, and glistening like gold in the rays of the sun, are never known to fade; hence it is that they make chaplets of it for the gods, a custom which was most faithfully observed by Ptolemæus, the king of Egypt. This plant grows in shrubberies: taken in wine, it acts as a diuretic and emmenagogue, and, in combination with honey, it is employed topically for burns. It is taken also in potions for the stings of serpents, and for pains in the loins; and, with honied wine, it

[12] As Fée remarks, it would be very dangerous to use it.

[13] "Cuique animalium."

[14] The Œnanthe pimpinellifolia of Linnæus. If taken internally, Fée says, it would tend to aggravate the disease so treated, in a very high degree.

[14*] See c. 38. Also B. xxvi. c. 55.

removes coagulated blood in the abdominal regions and the bladder. The leaves of it, beaten up and taken in doses of three oboli, in white wine, arrest the menstrual discharge when in excess.

The smell of this plant is far from disagreeable, and hence it is kept with clothes, to protect them from the attacks of vermin.

CHAP. 97. (26.)—EIGHT REMEDIES DERIVED FROM THE HYACINTH.

The hyacinth[15] grows in Gaul more particularly, where it is employed for the dye called "hysginum."[16] The root of it is bulbous, and is well known among the dealers in slaves: applied to the body, with sweet wine, it retards the signs of puberty,[17] and prevents them from developing themselves. It is curative, also, of gripings of the stomach, and of the bites of spiders, and it acts as a diuretic. The seed is administered, with abrotonum, for the stings of serpents and scorpions, and for jaundice.

CHAP. 98.—SEVEN REMEDIES DERIVED FROM THE LYCHNIS.

The seed of the lychnis,[18] too, which is just the colour of fire, is beaten up and taken in drink for the stings of serpents, scorpions, hornets, and other insects of similar nature: the wild variety, however, is prejudicial to the stomach. It acts as a laxative to the bowels; and, taken in doses of two drachmæ, is remarkably efficacious for carrying off the bile. So extremely baneful is it to scorpions, that if they so much as see it, they are struck with torpor. The people of Asia call the root of it "bolites," and they say that if it is attached to the body it will effectually disperse albugo.[19]

[15] See c. 38 of this Book; also B. xvi. c. 31.

[16] From the herb "hysge," used for dyeing a deep red. See B. ix. c. 65, and B. xxi. c. 36. No such colour, Fée says, can be obtained from the petals of either the Lilium Martagon or the Gladiolus communis, with which it has been identified.

[17] It has no such effect; and the slave-dealers certainly lost their pains in cosmetizing their slaves with it, their object being to make them look younger than they really were, and not older, as Hardouin seems to think.

[18] See c. 10 of this Book.

[19] White specks in the pupil of the eye, or whiteness of the cornea.

CHAP. 99. (27.)—FOUR REMEDIES DERIVED FROM THE VINCAPERVINCA.

The vincapervinca,[20] too, or chamædaphne,[21] is dried and pounded, and given to dropsical patients in water, in doses of one spoonful; a method of treatment which speedily draws off the water. A decoction of it, in ashes, with a sprinkling of wine, has the effect of drying tumours: the juice, too, is employed as a remedy for diseases of the ears. Applied to the regions of the stomach, this plant is said to be remarkably good for diarrhœa.

CHAP. 100.—THREE REMEDIES DERIVED FROM BUTCHER'S BROOM.

A decoction of the root of butcher's broom[22] is recommended to be taken every other day for calculus in the bladder, strangury, and bloody urine. The root, however, should be taken up one day, and boiled the next, the proportion of it being one sextarius to two cyathi of wine. Some persons beat up the root raw, and take it in water: it is generally considered, too, that there is nothing in existence more beneficial to the male organs than the young stalks of the plant, beaten up and used with vinegar.

CHAP. 101.—TWO REMEDIES DERIVED FROM THE BATIS.

The batis,[23] too, relaxes the bowels, and, beaten up raw, it is employed topically for the gout. The people of Egypt cultivate the acinos,[24] too, both as an article of food and for making chaplets. This plant would be the same thing as ocimum, were it not that the leaves and branches of it are rougher, and that it has a powerful smell. It promotes the catamenia, and acts as a diuretic.

CHAP. 102. (28.)—TWO REMEDIES DERIVED FROM THE COLOCASIA.

The colocasia,[25] according to Glaucias, softens the acridity of humours of the body, and is beneficial to the stomach.

[20] See c. 39 of this Book.

[21] "Ground-laurel."

[22] See c. 50, and B. xxiii. c. 83. The medicinal properties of this plant are not developed to any great extent; but it was thought till lately, Fée says, to be an excellent diuretic.

[23] See c. 49 and B. xxvi. c. 50.

[24] The Thymus acinos of Linnæus.

[25] See c. 51 of this Book. It is an alimentary plant, but eaten raw, it is possessed of some acridity.

CHAP. 103. (29.)—SIX REMEDIES DERIVED FROM THE ANTHYLLIUM OR ANTHYLLUM.

The people of Egypt eat the anthalium,[26] but I cannot find that they make any other use of it; but there is another plant called the "anthyllium,"[27] or, by some persons, the "anthyllum," of which there are two kinds: one, similar in its leaves and branches to the lentil, a palm in height, growing in sandy soils exposed to the sun, and of a somewhat saltish taste; the other, bearing a strong resemblance to the chamæpitys,[28] but smaller and more downy, with a purple flower, a strong smell, and growing in stony spots.

The first kind, mixed with rose-oil and applied with milk, is extremely good for affections of the uterus and all kinds of sores: it is taken as a potion for strangury and gravel in the kidneys, in doses of three drachmæ. The other kind is taken in drink, with oxymel, in doses of four drachmæ, for indurations of the uterus, gripings of the bowels, and epilepsy.

CHAP. 104. (30.)—EIGHT REMEDIES DERIVED FROM THE PARTHENIUM, LEUCANTHES, OR AMARACUS.

The parthenium[29] is by some persons called the "leucanthes," and by others the "amaracus." Celsus, among the Latin writers, gives it the names of "perdicium"[30] and "muralis." It grows in the hedge-rows of gardens, and has the smell of an apple, with a bitter taste. With the decoction of it, fomentations are made for maladies of the fundament, and for inflammations and indurations of the uterus: dried and applied with honey and vinegar, it carries off black bile, for which reason it is considered good for vertigo and calculus in the bladder. It is employed as a liniment, also, for erysipelas, and, mixed with stale axle-grease, for scrofulous sores. For tertian fevers the Magi recommend that it should be taken up with the left hand, it being mentioned at the time for whom it is gathered, care being also taken not to look back

[26] The Cyperus esculentus of Linnæus, the esculent souchet.

[27] The two varieties are identified with the Cressa Cretica and the Teucrium iva of Linnæus. The latter plant is said to be a sudorific.

[28] See B. xxvi. c. 53.

[29] The Matricaria parthenium of Linnæus. See c. 52.

[30] De Re Med. ii. 33. It must not be confounded with the plant of that name mentioned in c. 62 of this Book.

while doing so: a leaf of it should be laid beneath the patient's tongue, after which it must be eaten in a cyathus of water.

CHAP. 105. (31.)—EIGHT REMEDIES DERIVED FROM THE TRYCHNUM OR STRYCHNUM, HALICACABUM, CALLIAS, DORCYNION, MANICON, NEURAS, MORIO, OR MOLY.

The trychnon[31] is by some called "strychnon;" I only wish that the garland-makers of Egypt would never use this plant in making their chaplets, being deceived as they are by the resemblance in the leaves of both kinds to those of ivy. One of these kinds, bearing scarlet berries with a stone, enclosed in follicules, is by some persons called the "halicacabum,"[32] by others the "callion," and by the people of our country, the "vesicaria," from the circumstance of its being highly beneficial to the bladder[33] and in cases of calculus.

The trychnon is more of a woody shrub than a herb, with large follicules, broad and turbinated, and a large berry within, which ripens in the month of November. A third[34] kind, again, has a leaf resembling that of ocimum—but it is not my intention to give an exact description of it, as I am here speaking of remedies, and not of poisons; for a few drops of the juice, in fact, are quite sufficient to produce insanity. The Greek writers, however, have even turned this property into matter for jesting; for, according to them, taken in doses of one drachma, this plant is productive of delusive and prurient fancies, and of vain, fantastic visions, which vividly present all the appearance of reality: they say, too, that if the dose is doubled, it will produce downright madness, and that any further addition to it, will result in instant death.

This is the same plant which the more well-meaning writers have called in their innocence "dorycnion,"[35] from the circumstance that weapons used in battle are poisoned with it—for it grows everywhere—while others, again, who have treated of it

[31] The Solanum nigrum of Linnæus, or black night-shade. See B. xxiii. c. 108.

[32] The Physalis alkekengi of Linnæus; red night-shade, alkekengi, or winter cherry. Fée remarks, that the varieties of this plant in Egypt are very numerous, and that in many places, till very recently, it was employed as an article of food.

[33] "Vesica."

[34] The Solanum villosum of Lamarck.

[35] From δορὺ, a "spear."

more at length,[36] have given it the surname of "manicon."[37] Those, on the other hand, who have iniquitously concealed its real qualities, give it the name of "erythron" or "neuras," and others "perisson"—details, however, which need not be entered into more fully, except for the purpose of putting persons upon their guard.

There is another kind, again, also called "halicacabum," which possesses narcotic qualities, and is productive of death even more speedily than opium: by some persons it is called "morio," and by others "moly."[38] It has, however, been highly extolled by Diocles and Evenor, and, indeed, Timaristus has gone so far as to sing its praises in verse. With a wonderful obliviousness of remedies really harmless, they tell us, forsooth, that it is an instantaneous remedy for loose teeth to rinse them with halicacabum steeped in wine: but at the same time they add the qualification that it must not be kept in the mouth too long, or else delirium will be the result. This, however, is pointing out remedies with a vengeance, the employment of which will be attended with worse results than the malady itself.

There is a third kind[39] of halicacabum, that is esteemed as an article of food; but even though the flavour of it may be preferred to garden plants, and although Xenocrates assures us that there is no bodily malady for which the trychnos is not highly beneficial, they are none of them so valuable as to make me think it proper to speak more at length upon the subject, more particularly as there are so many other remedies, which are unattended with danger. Persons who wish to pass themselves off for true prophets, and who know too well how to impose upon the superstitions of others, take the root of the halicacabum in drink. The remedy against this poison—and it is with much greater pleasure that I state it—is to drink large quantities of honied wine made hot. I must not omit the fact, too, that this plant is naturally so baneful to the asp, that when the root is placed near that reptile, the very animal which kills others by striking them with torpor, is struck with torpor

[36] "Apertius," as suggested by Sillig, is a preferable reading to "parcius."

[37] From μάνια, "madness."

[38] The Physalis somnifera of Linnæus, the somniferous nightshade.

[39] The Solanum melongena of Linnæus.

itself; hence it is, that, beaten up with oil, it is used as a cure for the sting of the asp.

CHAP. 106.—SIX MEDICINES DERIVED FEOM THE CORCHORUS.

The corchorus[40] is a plant which is used at Alexandria as an article of food: the leaves of it are rolled up, one upon the other, like those of the mulberry, and it is wholesome, it is said, for the viscera, and in cases of alopecy, being good also for the removal of freckles. I find it stated also, that it cures the scab in cattle very rapidly: and, according to Nicander,[41] it is a remedy for the stings of serpents, if gathered before it blossoms.

CHAP. 107.—THREE REMEDIES DERIVED FROM THE CNECOS.

There would be no necessity to speak at any length of the cnecos or atractylis,[42] an Egyptian plant, were it not for the fact that it offers a most efficacious remedy for the stings of venomous animals, as also in cases of poisoning by fungi. It is a well-known fact, that persons, when stung by the scorpion, are not sensible of any painful effects so long as they hold this plant in their hand.

CHAP. 108. (33.)—ONE REMEDY DERIVED FROM THE PESOLUTA.

The Egyptians also cultivate the pesoluta[43] in their gardens, for chaplets. There are two kinds of this plant, the male and the female: either of them, it is said, placed beneath the person, when in bed, acts as an antaphrodisiac, upon the male sex more particularly.

CHAP. 109. (34.)—AN EXPLANATION OF GREEK TERMS RELATIVE TO WEIGHTS AND MEASURES.

As we have occasion to make use of Greek names very frequently when speaking of weights and measures,[44] I shall here subjoin, once for all, some explanation of them.

The Attic drachma—for it is generally the Attic reckoning

[40] The Corchorus olitorius of Linnæus. See B. XXV. c. 92.

[41] Theriaca, p. 44.

[42] See c. 53 of this Book.

[43] It has not been identified. Dalechamps, without any proof, identifies it with the Tussilago petasites of modern botany.

[44] See the Introduction to Vol. III.

that medical men employ—is much the same in weight as the silver denarius, and is equivalent to six oboli, the obolus being ten chalci; the cyathus is equal in weight to ten drachmæ. When the measure of an acetabulum is spoken of, it is the same as one fourth part of a hemina, or fifteen drachmæ in weight. The Greek mna, or, as we more generally call it, "mina," equals one hundred Attic drachmæ in weight.

SUMMARY.—Remedies, narratives, and observations, seven hundred and thirty.

ROMAN AUTHORS QUOTED.—Cato the Censor,[45] M. Varro,[46] Antias,[47] Cæpio,[48] Vestinus,[49] Vibius Rufus,[50] Hyginus,[51] Pomponius Mela,[52] Pompeius Lenæus,[53] Cornelius Celsus,[54] Calpurnius Bassus,[55] C. Valgius,[56] Licinius Macer,[57] Sextius Niger[58] who wrote in Greek, Julius Bassus[59] who wrote in Greek, Antonius Castor.[60]

FOREIGN AUTHORS QUOTED.—Theophrastus,[61] Democritus,[62] Orpheus,[63] Pythagoras,[64] Mago,[65] Menander[66] who wrote the Biochresta, Nicander,[67] Homer, Hesiod,[68] Musæus,[69] Sophocles,[70] Anaxilaüs.[71]

[45] See end of B. iii. [46] See end of B. ii. [47] See end of B. ii.

[48] A writer on flowers and chaplets, in the time of Tiberius. Nothing whatever beyond this seems to be known of him.

[49] C. Julius Atticus Vestinus, or, according to some authorities, M. Atticus Vestinus. He was consul A.D. 65; and, though innocent, was put to death by Nero's order, for alleged participation in the conspiracy of Piso.

[50] See end of B. xiv. [51] See end of B. iii.
[52] See end of B. iii. [53] See end of B. xiv.
[54] See end of B. vii. [55] See end of B. xvi.
[56] See end of B. xx. [57] See end of B. xix.
[58] See end of B. xii. [59] See end of B. xx.
[60] See end of B. xx. See also B. xxv. c. 5.
[61] See end of B. iii. [62] See end of B. ii.
[63] See end of B. xx. [64] See end of B. ii.
[65] See end of B. viii. [66] See end of B. xix.
[67] See end of B. viii. [68] See end of B. vii.

[69] An alleged disciple of Orpheus, and probably as fabulous a personage. Many works, now lost, passed under his name.

[70] One of the most celebrated of the Greek tragic writers; born B.C. 495. Of his 127 tragedies, only seven have come down to us.

[71] A Pythagorean philosopher, a native of one of the cities called La-

MEDICAL AUTHORS QUOTED.—Mnesitheus[72] who wrote on Chaplets, Callimachus[73] who wrote on Chaplets, Phanias[74] the physician, Simus,[75] Timaristus,[76] Hippocrates,[77] Chrysippus,[78] Diocles,[79] Ophelion,[80] Heraclides,[81] Hicesius,[82] Dionysius,[83] Apollodorus[84] of Citium, Apollodorus[85] of Tarentum, Praxagoras,[86] Plistonicus,[87] Medius,[88] Dieuches,[89] Cleophantus,[90] Philistio,[91] Asclepiades,[92] Crateuas,[93] Petronius Diodotus,[94] Iollas,[95] Erasistratus,[96] Diagoras,[97] Andreas,[98] Mnesides,[99] Epicharmus,[1] Damion,[2] Dalion,[3] Sosimenes,[4] Tlepolemus,[5] Metrodorus,[6] Solo,[7] Lycus,[8] Olympias[9] of Thebes, Philinus,[10] Petrichus,[11] Micton,[12] Glaucias,[13] Xenocrates.[14]

rissa. Being accused of magical practices, he was banished from the city of Rome by the Emperor Augustus. The explanation of these charges is, that he probably possessed a superior knowledge of natural philosophy. See B. xxv. c. 95. B. xxviii. c. 49. B. xxxii. c. 52, and B. xxxv. c. 50.

[72] A physician, a native of Athens in the fourth century B.C. He is supposed to have belonged to the sect of the Dogmatici, and was greatly celebrated for his classification of diseases. He wrote on diet and drink, among other subjects.

[73] Probably the same writer that is mentioned at the end of B. iv.; or, possibly, a physician of that name, who was a disciple of Herophilus, and lived about the second century B.C.

[74] A distinguished Peripatetic philosopher of Eresos in Lesbos, a disciple of Aristotle, and a contemporary of Theophrastus.

[75] Of this writer, nothing whatever is known, beyond the mention made of him in c. 88 of this Book, and in B. xxii. c. 32.

[76] Nothing whatever is known relative to this writer.

[77] See end of B. vii.

[78] See end of B. xx.

[79] See end of B. xx.

[80] See end of B. xx.

[81] For Heraclides of Pontus, see end of B. iv. For Heraclides of Tarentum, see end of B. xii.

[82] See end of B. xv.

[83] See end of B. xii.

[84] See end of B. xx.

[85] See end of B. xx.

[86] See end of B. xx.

[87] See end of B. xx.

[88] See end of B. xx.

[89] See end of B. xx.

[90] See end of B. xx.

[91] See end of B. xx.

[92] See end of B. vii.

[93] See end of B. xx.

[94] See end of B. xx.

[95] See end of B. xii.

[96] See end of B. xi.

[97] See end of B. xii.

[98] See end of B. xx.

[99] See end of B. xii.

[1] See end of B. xx.

[2] See end of B. xx.

[3] See end of B. vi.

[4] See end of B. xx.

[5] See end of B. xx.

[6] See end of B. xx.

[7] See end of B. xx.

[8] See end of B. xii.

[9] See end of B. xx.

[10] See end of B. xx.

[11] See end of B. xix.

[12] See end of B. xx.

[13] See end of B. xx.

[14] See end of B. xx.

BOOK XXII.

THE PROPERTIES OF PLANTS AND FRUITS.

CHAP. 1.—THE PROPERTIES OF PLANTS.

NATURE and the earth might have well filled the measure of our admiration, if we had nothing else to do but to consider the properties enumerated in the preceding Book, and the numerous varieties of plants that we find created for the wants or the enjoyment of mankind. And yet, how much is there still left for us to describe, and how many discoveries of a still more astonishing nature! The greater part, in fact, of the plants there mentioned recommend themselves to us by their taste, their fragrance, or their beauty, and so invite us to make repeated trials of their virtues: but, on the other hand, the properties of those which remain to be described, furnish us with abundant proof that nothing has been created by Nature without some purpose to fulfil, unrevealed to us though it may be.

CHAP. 2. (1.)—PLANTS USED BY NATIONS FOR THE ADORNMENT OF THE PERSON.

I remark, in the first place, that there are some foreign nations which, in obedience to long-established usage, employ certain plants for the embellishment of the person. That, among some barbarous peoples, the females[1] stain the face by means of various plants, there can be little doubt, and among the Daci and the Sarmatæ we find the men even marking[2] their bodies. There is a plant in Gaul, similar to the plantago in appearance, and known there by the name of "glastum:"[3]

[1] Fée remarks, that at the present day, in all savage nations in which tatooing is practised, the men display more taste and care in the operation than is shewn by the females. There is little doubt that it is the art of tatooing the body, or in other words, first puncturing it and then rubbing in various colours, that is here spoken of by Pliny.

[2] "Inscribunt." "Writing upon," or "tatooing," evidently.

[3] Our "woad," the Isatis tinctoria of Linnæus, which imparts a blue

with it both matrons and girls[4] among the people of Britain are in the habit of staining the body all over, when taking part in the performance of certain sacred rites; rivalling hereby the swarthy hue of the Æthiopians, they go in a state of nature.

CHAP. 3. (2.)—EMPLOYMENT OF PLANTS FOR DYEING. EXPLANATION OF THE TERMS SAGMEN, VERBENA, AND CLARIGATIO.

We know, too, that from plants are extracted admirable colours for dyeing; and, not to mention the berries[5] of Galatia,[6] Africa, and Lusitania, which furnish the coccus, a dye reserved for the military costume[7] of our generals, the people of Gaul beyond the Alps produce the Tyrian colours, the conchyliated,[8] and all the other hues, by the agency of plants[9] alone. They have not there to seek the murex at the bottom of the sea, or to expose themselves to be the prey of the monsters of the deep, while tearing it from their jaws, nor have they to go, searching in depths to which no anchor has penetrated—and all this for the purpose of finding the means whereby some mother of a family may appear more charming in the eyes of her paramour, or the seducer may make himself more captivating to the wife of another man. Standing on dry land, the people there gather in their dyes just as we do our crops of

colour.. The root of this Celtic wood is probably "glas," "blue," whence also our word "glass;" and it is not improbable that the name of glass was given to it from the blue tints which it presented. Julius Cæsar and Pomponius Mela translate this word "glastum," by the Latin "vitrum," "glass."

[4] "Conjuges nurusque." Cæsar says that *all* the people in Britain were in the habit of staining the body with woad, to add to the horror of their appearance in battle. Pomponius Mela expresses himself as uncertain for what purpose it was done, whether it was to add to their beauty, or for some other reasons to him unknown.

[5] "Granis." What the ancients took to be a vegetable substance, is now known to be an insect, the kermes of the Quercus coccifera.

[6] See B. ix. c. 63.

[7] "Paludamentis." The "paludamentum" was the cloak worn by a Roman general when in command, his principal officers, and personal attendants. It was open in front, reached to the knees or thereabout, and hung over the shoulders, being fastened across the chest by a clasp. It was commonly white or purple.

[8] For an account of all these colours see B. ix. cc. 60—65.

[9] The vaccinium for instance. See B. xvi. c. 31.

corn—though one great fault in them is, that they wash[10] out; were it not for which, luxury would have the means of bedecking itself with far greater magnificence, or, at all events, at the price of far less danger.

It is not my purpose, however, here to enter further into these details, nor shall I make the attempt, by substituting resources attended with fewer risks, to circumscribe luxury within the limits of frugality; though, at the same time, I shall have to speak on another occasion how that vegetable productions are employed for staining stone and imparting their colours to walls.[11] Still, however, I should not have omitted to enlarge upon the art of dyeing, had I found that it had ever been looked upon as forming one of our liberal[12] arts. Meantime, I shall be actuated by higher considerations, and shall proceed to show in what esteem we are bound to hold the mute[13] plants even, or in other words, the plants of little note. For, indeed, the authors and founders of the Roman sway have derived from these very plants even almost boundless results; as it was these same plants, and no others, that afforded them the "sagmen,"[14] employed in seasons of public calamity, and the "verbena" of our sacred rites and embassies. These two names, no doubt, originally signified the same thing, —a green turf torn up from the citadel with the earth attached to it; and hence, when envoys were dispatched to the enemy for the purpose of clarigation, or, in other words, with the object of *clearly*[15] demanding restitution of property that had been carried off, one of these officers was always known as the "verbenarius."[16]

[10] Fée thinks that the art of dyeing with alkanet and madder may be here alluded to.

[11] See B. xxxv. c. 1.

[12] The "good," "ingenuous," or "liberal" arts were those which might be practised by free men without loss of dignity. Pliny is somewhat inconsistent here, for he makes no scruple at enlarging upon the art of medicine, which among the Romans was properly not a liberal, but a servile, art.

[13] "Surdis."

[14] Festus says the "verbenæ," or *pure* herbs, were called "sagmina," because they were taken from a sacred (sacer) place. It is more generally supposed that "sagmen" comes from "sancio," "to render inviolable," the person of the bearer being looked upon as inviolable.

[15] "Clare."

[16] Or bearer of the "verbena." See further on this subject in B. xxv. c. 59.

CHAP. 4. (3.)—THE GRASS CROWN: HOW RARELY IT HAS BEEN AWARDED.

Of all the crowns with which, in the days of its majesty, the all-sovereign people, the ruler of the earth, recompensed the valour of its citizens, there was none attended with higher glory than the crown of grass.[17] The crowns[18] bedecked with gems of gold, the vallar, mural, rostrate, civic, and triumphal crowns, were, all of them, inferior to this: great, indeed, was the difference between them, and far in the background were they thrown by it. As to all the rest, a single individual could confer them, a general or commander on his soldiers for instance, or, as on some occasions, on his colleague: the senate, too, exempt from the cares and anxieties of war, and the people in the enjoyment of repose, could award them, together with the honours of a triumph.

(4.) But as for the crown of grass, it was never conferred except at a crisis of extreme desperation, never voted except by the acclamation of the whole army, and never to any one but to him who had been its preserver. Other crowns were awarded by the generals to the soldiers, this alone by the soldiers, and to the general. This crown is known also as the "obsidional" crown, from the circumstance of a beleaguered army being delivered, and so preserved from fearful disaster. If we are to regard as a glorious and a hallowed reward the civic crown, presented for preserving the life of a single citizen, and him, perhaps, of the very humblest rank, what, pray, ought to be thought of a whole army being saved, and indebted for its preservation to the valour of a single individual?

The crown thus presented was made of green grass,[19] gathered on the spot where the troops so rescued had been beleaguered. Indeed, in early times, it was the usual token of victory for the vanquished to present to the conqueror a handful of grass; signifying thereby that they surrendered[20] their native soil, the land that had nurtured them, and the very right even there to be interred—a usage which, to my own knowledge, still exists among the nations of Germany.[21]

[17] "Corona graminea."

[18] For a description of these various crowns, see B. xvi. c. 3.

[19] Sometimes also, weeds, or wild flowers.

[20] See Servius on the Æneid, B. viii. l. 128.

[21] No doubt, the old English custom of delivering seisin by presenting a turf, originated in this.

CHAP. 5. (5.)—THE ONLY PERSONS THAT HAVE BEEN PRESENTED WITH THIS CROWN.

L. Siccius Dentatus[22] was presented with this crown but once, though he gained as many as fourteen civic crowns, and fought one hundred and twenty battles, in all of which he was victorious—so rarely is it that an army has to thank a single individual only for its preservation! Some generals, however, have been presented with more than one of these crowns, P. Decius Mus,[23] the military tribune, for example, who received one from his own army, and another from the troops which he had rescued[24] when surrounded. He testified by an act of devoutness in what high esteem he held such an honour as this, for, adorned with these insignia, he sacrificed a white ox to Mars, together with one hundred red oxen, which had been presented to him by the beleaguered troops as the recompense of his valour: it was this same Decius, who afterwards, when consul, with Imperiosus[25] for his colleague, devoted his life to secure victory to his fellow-citizens.

This crown was presented also by the senate and people of Rome—a distinction than which I know of nothing in existence more glorious—to that same Fabius[26] who restored the fortunes of Rome by avoiding a battle; not, however, on the occasion when he preserved the master of the horse[27] and his army; for then it was deemed preferable by those who were indebted to him for their preservation to present him with a crown under a new title, that of "father." The crown of grass was, however, awarded to him, with that unanimity which I have mentioned, after Hannibal had been expelled from Italy; being the only crown, in fact, that has hitherto been placed upon the head of a citizen by the hands of the state itself, and, another remarkable distinction, the only one that has ever been conferred by the whole of Italy united.

[22] See B. vii. c. 29.

[23] See B. xvi. c. 5.

[24] In the Samnite war. He died B.C. 340.

[25] Titus Manlius Torquatus Imperiosus, consul A.U.C. 414. It was he who put his own son to death for engaging the enemy against orders.

[26] Q. Fabius Maximus, surnamed Cunctator, for his skill in avoiding an engagement with Hannibal, and so wearing out the Carthaginian troops.

[27] Q. Minutius, the Magister Equitum.

CHAP. 6. (6.)—THE ONLY CENTURION THAT HAS BEEN THUS HONOURED.

In addition to the persons already mentioned, the honour of this crown has been awarded to M. Calpurnius Flamma,[28] then a military tribune in Sicily; but up to the present time it has been given to a single centurion only, Cneius Petreius Atinas, during the war with the Cimbri. This soldier, while acting as primipilus[29] under Catulus, on finding all retreat for his legion cut off by the enemy, harangued the troops, and after slaying his tribune who hesitated to cut a way through the encampment of the enemy, brought away the legion in safety. I find it stated also by some authors, that, in addition to this honour, this same Petreius, clad in the prætexta, offered sacrifice at the altar, to the sound of the pipe,[30] in presence of the then consuls,[31] Marius and Catulus.

The Dictator Sylla has also stated in his memoirs, that when, legatus in the Marsic War he was presented with this crown by the army, at Nola; an event which he caused to be commemorated in a painting at his Tusculan villa, which afterwards became the property of Cicero. If there is any truth in this statement, I can only say that it renders his memory all the more execrable, and that, by his proscriptions, with his own hand he tore this crown from his brow, for few indeed were the citizens whom he thus preserved, in comparison with those he slaughtered at a later period. And let him even add to this high honour his proud surname of "Felix,"[32] if he will; all the glories of this crown he surrendered to Sertorius, from the moment that he put his proscribed fellow-citizens in a stage of siege throughout the whole world.

Varro, too, relates that Scipio Æmilianus was awarded the obsidional crown in Africa, under the consul Manilius,[33] for the preservation of three cohorts, by bringing as many to their rescue; an event commemorated by an inscription upon the base of the statue erected in honour of him by the now deified Emperor Augustus, in the Forum which bears his name. Au-

[28] See Livy, B. xxii.

[29] The primipilus was the first centurion of the first maniple of the triarii; also called "primus centurionum."

[30] "Ad tibicinem."

[31] A.U.C. 652.

[32] The "Fortunate."

[33] A.U.C. 605.

gustus himself was also presented by the senate with the obsidional crown, upon the ides[34] of September, in the consulship[35] of M. Cicero the Younger, the civic crown being looked upon as not commensurate with his deserts. Beyond these, I do not find any one mentioned as having been rewarded with this honour.

CHAP. 7.—REMEDIES DERIVED FROM OTHER CHAPLET PLANTS.

No plant[36] in particular was employed in the composition of this crown, such only being used as were found growing on the spot so imperilled; and thus did they become the means, however humble and unnoted themselves, of conferring high honour and renown. All this, however, is but little known among us at the present day; a fact which I am the less surprised at, when I reflect that those plants even are treated with the same indifference, the purpose of which it is to preserve our health, to allay our bodily pains, and to repel the advances of death! And who is there that would not visit with censure, and justly visit, the manners of the present day? Luxury and effeminacy have augmented the price at which we live, and never was life more hankered after, or worse cared[37] for, than it is at present. This, however, we look upon as the business of others, forsooth; other persons must see to it, without our troubling ourselves to request them, and the physicians must exercise the necessary providence in our behalves.[38] As for ourselves, we go on enjoying our pleasures, and are content to live—a thing that in my opinion reflects the highest possible disgrace—by putting faith in others.[39]

Nay, even more than this, we ourselves are held in derision by many, for undertaking these researches, and are charged with busying ourselves with mere frivolities! It is some solace, however, in the prosecution of these our boundless labours, to have Nature as our sharer in this contempt: Nature who, as we will prove beyond a doubt, has never failed in coming to the assistance of man, and has implanted[40] reme-

[34] 13th of September. [35] A.U.C. 723.

[36] Hence we may conclude that the word "gramen" signified not only "grass," but any plant in general.

[37] By reason of the luxury and sensuality universally prevalent.

[38] This is said in bitter irony.

[39] Trusting to the good faith and research of the physician.

[40] "Inseruisse."

dies for our use in the most despised even of the vegetable productions, medicaments in plants which repel us with their thorns.

It is of these, in fact, that it remains for us now to speak, as next in succession to those which we have mentioned in the preceding Book; and here we cannot sufficiently admire, and, indeed, adore,[41] the wondrous providence displayed by Nature. She had given us, as already[42] shewn, plants soft to the touch, and agreeable to the palate; in the flowers she had painted the remedies for our diseases with her varied tints, and, while commingling the useful with the delicious, had attracted our attention by means of the pleasures of the eye. Here, however, she has devised another class of plants, bristling and repulsive to the sight, and dangerous to the touch; so much so, indeed, that we fancy we all but hear the voice of her who made them as she reveals to us her motives for so doing. It is her wish, she says, that no ravening cattle may browse upon them, that no wanton hand may tear them up, that no heedless footstep may tread them down, that no bird, perching there, may break them: and in thus fortifying them with thorns, and arming them with weapons, it has been her grand object to save and protect the remedies which they afford to man. Thus we see, the very qualities even which we hold in such aversion, have been devised by Nature for the benefit and advantage of mankind.

CHAP. 8. (7.)—THE ERYNGE OR ERYNGIUM.

In the first rank of the plants armed with prickles, the eryngé[43] or eryngion stands pre-eminent, a vegetable production held in high esteem as an antidote formed for the poison of serpents and all venomous substances. For stings and bites of this nature, the root is taken in wine in doses of one drachma, or if, as generally is the case, the wound is attended with fever, in water. It is employed also, in the form of a lini-

[41] "Amplecti." [42] In the Twentieth Book.

[43] It has been thought by some that this is the Scolymus maculatus of Linnæus; the spotted yellow thistle. But the more general opinion is that it is the eringo, or Eryngium campestre of Linnæus. It derives its name from the Greek ἐρεύγειν, from its asserted property of dispelling flatulent eructations. It is possessed in reality of few medicinal properties, and is only used occasionally, at the present day, as a diuretic. See B. xxi. c. 56.

ment, for wounds, and is found to be particularly efficacious for those inflicted by water-snakes or frogs. The physician Heraclides states it as his opinion that, boiled in goose-broth, it is a more valuable remedy than any other known, for aconite[44] and other poisons.[45] Apollodorus recommends that, in cases of poisoning, it should be boiled with a frog, and other authorities, in water only. It is a hardy plant, having much the appearance of a shrub, with prickly leaves and a jointed stem; it grows a cubit or more in height. Sometimes it is found of a whitish colour, and sometimes black,[46] the root of it being odoriferous. It is cultivated in gardens, but it is frequently to be found growing[47] spontaneously in rugged and craggy localities. It grows, too, on the sea-shore, in which case it is tougher and darker than usual, the leaf resembling that of parsley.[48]

CHAP. 9. (8.)—THE ERYNGIUM, CALLED CENTUM CAPITA: THIRTY REMEDIES.

The white variety of the eryngium is known in our language as the "centum capita."[49] It has all the properties above-mentioned, and the Greeks employ both the stalk and the root as an article of food,[50] either boiled or raw. There are some marvellous facts related in connexion with this plant; the root[51]

[44] See B. xxvii. c. 2.

[45] By the word "toxica," Poinsinet would understand, not poisons in general, but the venom of the toad, which was called, he says, in the Celtic and Celto-Scythic languages, *toussac* and *tossa*. Fée ridicules the notion.

[46] Or rather, Fée says, deep blue. He identifies this with the Eryngium cyaneum of Linnæus, the eringo, with a blue flower.

[47] This, as well as the next, is identical, probably, with the Eryngium maritimum of Linnæus; our sea-holly. The species found in Greece, in addition to the above, are the Eryngium tricuspidatum, multifidum, and parviflorum.

[48] Pliny probably makes a mistake here, and reads σελίνον, "parsley," for σκόλυμος, a "thistle." Dalechamps is of this opinion, from an examination of the leaf; and Brotier adopts it.

[49] Or "hundred heads," the ordinary Eryngium campestre of Linnæus. It is still called panicaut a cent têtes, by the French.

[50] It is no longer used for this purpose; but Fée is of opinion that it owes its French name of "panicaut," from having been used in former times as a substitute for bread—*pain*.

[51] It is not improbable that this plant is the same as the mandrake of *Genesis*, c. xxx. 14; which is said to have borne some resemblance to the human figure, and is spoken of by the commentators as male and female.

of it, it is said, bears a strong resemblance to the organs of either sex; it is but rarely found, but if a root resembling the male organs should happen to fall in the way of a man, it will ensure him woman's love; hence it is that Phaon the Lesbian was so passionately beloved[52] by Sappho. Upon this subject, too, there have been numerous other reveries, not only on the part of the Magi, but of Pythagorean philosophers even as well.

So far as its medicinal properties are concerned, in addition to those already mentioned, this plant, taken in hydromel, is good for flatulency, gripings of the bowels, diseases of the heart, stomach, liver, and thoracic organs, and, taken in oxycrate, for affections of the spleen. Mixed with hydromel, it is recommended also for diseases of the kidneys, strangury, opisthotony, spasms, lumbago, dropsy, epilepsy, suppression or excess of the catamenia, and all maladies of the uterus. Applied with honey, it extracts foreign substances from the body, and, with salted axle-grease and cerate, it disperses scrofulous sores, imposthumes of the parotid glands, inflamed tumours, denudations of the bones, and fractures. Taken before drinking, it prevents the fumes of wine from rising to the head, and it arrests looseness of the bowels. Some of our authors have recommended that this plant should be gathered at the period of the summer solstice, and that it should be applied, in combination with rain water, for all kinds of maladies of the neck. They say too, that, attached as an amulet to the person, it is a cure for albugo.[53]

CHAP. 10. (9.)—THE ACANOS; ONE REMEDY.

There are some authors, too, who make the acanos[54] to be a species of eryngium. It is a thorny plant, stunted, and spreading, with prickles of a considerable size. Applied topically, they say, it arrests hæmorrhage in a most remarkable degree.

[52] The root contains a small quantity of essential oil, with stimulating properties; and this fact, Fée thinks, would, to a certain extent, explain this story of Sappho. It is not improbable that it was for these properties that it was valued by the rival wives of Jacob.

[53] White specks in the eye.

[54] Sprengel identifies this with the Onopordum acanthium; but Fée thinks that if it belongs to the Onopordum at all, it is more likely to be the Onopordum acaulton, or the O. Græcum.

CHAP. 11. — THE GLYCYRRHIZA OR ADIPSOS: FIFTEEN REMEDIES.

Other authors, again, have erroneously taken the glycyrrhiza[55] to be a kind of eryngium: it will, therefore, be as well to take this opportunity of making some further mention of it. There can be no doubt, however, that this is one of the thorny plants, the leaves of it being covered with prickles,[56] substantial, and viscous and gummy to the touch: it has much the appearance of a shrub, is a couple of cubits in height, and bears a flower like that of the hyacinth, and a fruit the size of the little round balls[57] of the plane. The best kind is that grown in Cilicia, and the next best that of Pontus; the root of it is sweet, and this is the only part that is used. It is gathered at the setting of the Vergiliæ,[58] the root of it being long, like that of the vine.[59] That which is yellow, the colour of boxwood in fact, is superior to the darker kind, and the flexible is better than the brittle. Boiled down to one-third, it is employed for pessaries; but, for general purposes, a decoction is made of it of the consistency of honey. Sometimes, also, it is used pounded, and it is in this form that it is applied as a liniment for wounds and all affections of the throat. The juice[60] of it is also very good for the voice, for which purpose it is thickened and then placed beneath the tongue: it is good, too, for the chest and liver.

We have already stated[61] that this plant has the effect of

[55] Or "sweet-root," our liquorice; the Glycyrrhiza glabra of Linnæus. In reality, Fée remarks, there is no resemblance whatever between it and the Eryngium, no kind of liquorice being prickly.

[56] "Echinatis;" literally, "like a hedge-hog." Pliny, it is supposed, read here erroneously in the Greek text, (from which Dioscorides has also borrowed) *ἐοικότα ἐχίνῳ*, "like a hedge-hog," for *ἐοικότα σχίνῳ*, "like those of the lentisk."

[57] "Pilularum." [58] Or Pleiades.

[59] Dioscorides compares the root, with less exactness, with that of gentian.

[60] The same preparation that is known to us as Spanish liquorice or Spanish juice.

[61] In B. xi. c. 119. It certainly has the effect of palling the appetite, but in many people it has the effect of creating thirst instead of allaying it. Fée thinks that from the fecula and sugar that it contains, it may possibly be nourishing, and he states that it is the basis of a favourite liquor in the great cities of France. Spanish liquorice water is used in England, but only by school-boys, as a matter of taste, and by patients as a matter of necessity.

allaying hunger and thirst: hence it is that some authors have given it the name of "adipsos,"[62] and have prescribed it for dropsical patients, to allay thirst. It is for this reason, too, that it is chewed as a stomatic,[63] and that the powder of it is often sprinkled on ulcerous sores of the mouth and films[64] on the eyes: it heals, too, excrescences[65] of the bladder, pains in the kidneys, condylomata,[66] and ulcerous sores of the genitals. Some persons have given it in potions for quartan fevers, the doses being two drachmæ, mixed with pepper in one hemina of water. Chewed, and applied to wounds, it arrests hæmorrhage:[67] some authors have asserted, also, that it expels calculi of the bladder.

CHAP. 12. (10.)—TWO VARIETIES OF THE TRIBULUS; TWELVE REMEDIES.

Of the two[68] kinds of tribulus, the one is a garden plant, the other grows in rivers only. There is a juice extracted from them which is employed for diseases of the eyes, it being of a cool and refreshing nature, and, consequently, useful for inflammations and abscesses. Used with honey, this juice is curative of spontaneous ulcerations, those of the mouth in particular; it is good also for affections of the tonsils. Taken in a potion, it breaks calculi of the bladder.

The Thracians who dwell on the banks of the river Strymon feed their horses[69] on the leaves of the tribulus, and employ the kernels as an article of food, making of them a very agreeable kind of bread, which acts astringently[70] upon the bowels. The

[62] The Greek for "without thirst."

[63] Or "mouth medicine." Beyond being a bechic, or cough-medicine, it has no medicinal properties whatever.

[64] "Pterygiis." The word "pterygia" has been previously used as meaning a sort of hang-nail, or, perhaps, whitlow.

[65] "Scabiem."

[66] Swellings of the anus more particularly.

[67] It has in reality no such effect.

[68] Probably the Fagonia Cretica and the Trapa natans of Linnæus. See B. xxi. c. 58. The first, Fée remarks, is a native of Candia, the ancient Crete, and a stranger to the climates of Greece and Italy. This may account for Pliny calling it a garden plant.

[69] This is said, Fée remarks, in reference to the Trapa natans, the seed of which is rich in fecula, and very nutritious.

[70] "Contrahat ventrem." It would not act, Fée says, as an astringent,

root, if gathered by persons in a state of chastity and purity,[71] disperses scrofulous sores; and the seed, used as an amulet, allays the pains attendant upon varicose veins: pounded and mixed with water, it destroys fleas.

CHAP. 13. (11.)—THE STŒBE OR PHEOS.

The stœbe,[72] by some persons known as the "pheos," boiled in wine, is particularly good for the cure of suppurations of the ears, and for extravasations of blood in the eyes from the effects of a blow. It is employed also in injections for hæmorrhage and dysentery.

CHAP. 14. (12.)—TWO VARIETIES OF THE HIPPOPHAES: TWO REMEDIES.

The hippophaes[73] grows in sandy soils, and on the sea-shore. It is a plant with white thorns, and covered with clusters, like the ivy, the berries being white, and partly red. The root of it is full of a juice which is either used by itself, or else is made up into lozenges with meal of fitches: taken in doses of one obolus, it carries off bile, and it is extremely beneficial if used with honied wine. There is another[74] hippophaes, without either stalk or flowers, and consisting only of diminutive leaves: the juice of this also is wonderfully useful for dropsy.

These plants would appear, too, to be remarkably well adapted to the constitution of the horse, as it can be for no other reason than this that they have received their name.[75]

but would have the effect of imparting nutriment in a very high degree, without overloading the stomach.

[71] A harmless, or, perhaps, beneficial, superstition.

[72] The synonym of this plant is probably unknown. Dalechamps identifies it with the Sagittaria sagittifolia, C. Bauhin with the Centaurea calcitrapa, and Clusius, Belli, and Sprengel, with the Poterium spinosum. None of these plants, however, are prickly and aquatic, characteristics, according to Theophrastus, of the Stœbe: Hist. Plant. B. iv. c. 11. Fée considers its identification next to impossible.

[73] Probably the Hippophaës rhamnoides of Linnæus. This, however, Fée says, has no milky juice, but a dry, tough, ligneous root. Sprengel identifies it with the Euphorbia spinosa of Linnæus, on account of its milky juice; but that plant, as Fée remarks, does not bear berries, properly so called, and the fruit is yellow and prickly.

[74] See B. xxvii. c. 66. It is identified by Fée with the Carduus stellatus or Centaurea calcitrapa of Linnæus, the common star-thistle.

[75] As compounds of ἵππος, a "horse." Hardouin, however, thinks that

For, in fact, there are certain plants which have been created as remedies for the diseases of animals, the Divinity being bounteously lavish of his succours and resources; so much so, indeed, that we cannot sufficiently admire the wisdom with which he has arranged them according to the classes of animated beings which they are to serve, the causes which give rise to their various maladies, and the times at which they are likely to be in requisition: hence it is that there is no class of beings, no season, and, so to speak, no day, that is without its remedy.

CHAP. 15. (13.)—THE NETTLE: SIXTY-ONE REMEDIES.

What plant can there possibly be that is more an object of our aversion than the nettle?[76] And yet, in addition to the oil which we have already mentioned[77] as being extracted from it in Egypt, it abounds in medicinal properties. The seed of it, according to Nicander, is an antidote to the poison of hemlock,[78] of fungi, and of quicksilver.[79] Apollodorus prescribes it, too, taken in the broth of a boiled tortoise,[80] for the bite of the salamander,[81] and as an antidote for the poison of henbane, serpents, and scorpions. The stinging pungency even of the nettle has its uses; for, by its contact, it braces the uvula, and effects the cure of prolapsus of the uterus, and of procidence of the anus in infants. By touching the legs of persons in a lethargy, and the forehead more particularly, with nettles,

the names ἱπποφαὲς and ἱππόφαιστον have another origin, and that they are compounds of φάος, "lustre,"—from the brilliancy which they were said to impart to cloths—and ἵππος, in an augmentative sense, meaning "great lustre."

[76] See B. xxi. c. 55. Only two species of the nettle, Fée remarks, were known to the ancients, the Urtica urens and the U. dioica; and these have been confounded by Pliny and other writers.

[77] In B. xv. c. 7. The Urtica urens has no oleaginous principles, and the oil of nettles, as Fée says, must have been a medicinal composition, the properties of which are more than hypothetical. The plant boiled, he remarks, can have no medicinal properties whatever, and it is with justice excluded from the modern Materia Medica. It is, however, still employed by some few practitioners, and the leaves are used, in some cases, to restore the vital action, by means of urtication.

[78] "Cicutæ."

[79] Mercury, as already mentioned in a previous Note, is not poisonous.

[80] "Testudinis." He may, possibly, mean a turtle.

[81] See B. x. c. 86.

they are awakened.[82] Applied with salt, the nettle is used to heal the bites of dogs, and beaten up and applied topically, it arrests bleeding[83] at the nostrils, the root in particular. Mixed with salt, also, it is employed for the cure of cancers and foul ulcers; and, applied in a similar manner, it cures sprains and inflamed tumours, as well as imposthumes of the parotid glands and denudations of the bones. The seed of it, taken with boiled must, dispels hysterical suffocations, and, applied topically, it arrests mucous discharges of the nostrils. Taken with hydromel, after dinner, in doses of two oboli, the seed produces a gentle vomit;[84] and a dose of one obolus, taken in wine, has the effect of dispelling lassitude. The seed is prescribed also, parched, and in doses of one acetabulum, for affections of the uterus; and, taken in boiled[85] must, it is a remedy for flatulency of the stomach. Taken in an electuary, with honey, it gives relief in hardness of breathing, and clears the chest by expectoration: applied with linseed, it is a cure for pains in the side, with the addition of some hyssop and a little pepper. The seed is employed also in the form of a liniment for affections of the spleen, and, parched and taken with the food, it acts as a laxative in constipation of the bowels. Hippocrates[86] says that the seed, taken in drink, acts as a purgative upon the uterus; and that taken, parched, with sweet wine, in doses of one acetabulum, or applied externally with juice of mallows, it alleviates pains in that organ. He states also that, used with hydromel and salt, it expels intestinal worms, and that a liniment made of the seed will restore the hair when falling off. Many persons, too, employ the seed topically, with old oil, for diseases of the joints, and for gout, or else the leaves beaten up with bears'-grease: the root, too, pounded in vinegar, is no less useful for the same purposes, as

[82] The process of "urtication," alluded to in Note [77].

[83] Fée considers this extremely doubtful.

[84] An abominable refinement (if we may use the term) in gluttony, which would appear to have been practised among the Romans; though Fée thinks it possible that such a practice may have been considered advisable in the medical treatment of certain maladies. Be this as it may, the system of using vomits has prevailed to some extent in this country, and during the present century, too, among persons in the fashionable world, when expected to play their part at several entertainments in one evening.

[85] "Sapa" Grape-juice boiled down to one-third.

[86] De Morb. Mul. text. 47.

also for affections of the spleen. Boiled in wine, and applied with stale axle-grease and salt, the root disperses inflamed tumours, and, dried, it is used as a depilatory.

Phanias, the physician, has enlarged upon the praises of the nettle, and he assures us that, taken with the food, either boiled or preserved, it is extremely beneficial for affections of the trachea, cough, fluxes of the bowels, stomachic complaints, inflamed tumours, imposthumes of the parotid glands, and chilblains; that, taken with oil, it acts as a sudorific; and that, boiled with shell-fish, it relaxes the bowels. He says, too, that taken with a ptisan,[87] it facilitates expectoration and acts as an emmenagogue, and that, applied with salt, it prevents ulcers from spreading. The juice of the nettle is also used: applied to the forehead, it arrests bleeding at the nose, taken in drink it acts as a diuretic and breaks calculi in the bladder, and, used as a gargle, it braces the uvula when relaxed.

Nettle-seed should be gathered at harvest-time: that of Alexandria is the most highly esteemed. For all these different purposes the milder and more tender plants are the best, the wild nettle[88] in particular: this last, taken in wine, has the additional property of removing leprous spots on the face. When animals refuse to couple, it is recommended to rub the sexual organs with nettles.[89]

CHAP. 16. (14.)—THE LAMIUM: SEVEN REMEDIES.

The variety of nettle, too, which we have already[90] spoken of under the name of "lamium,"[91] the most innoxious of them all, the leaves not having the property of stinging, is used for the cure of bruises and contusions, with a sprinkling[92] of salt, as also for burns and scrofulous sores, tumours, gout, and wounds. The middle of the leaf is white, and is used for the cure of erysipelas. Some of our authors have distinguished the various species of this plant according to their respective seasons; thus, for instance, the root of the autumn nettle, they say, carried on the person as an amulet, is a cure for tertian fevers, if due care is taken, when pulling up the

[87] See B. xviii. c. 13.
[88] See B. xxi. c. 55.
[89] See Hippocrates, Hippiatr.
[90] In B. xxi. c. 55.
[91] The Lamium maculatum of Linnæus: dead nettle, or archangel. The same as the Leuce, mentioned in B. xxvii. c. 77.
[92] "Cum micâ salis."

root, to mention the patient's name, and to state who he is and who are his parents. They say, too, that this plant is productive of similar results in quartan fever: and they pretend that the root of the nettle, with the addition of salt, will extract foreign substances from the body; and that the leaves, mixed with stale axle-grease, will disperse scrofulous sores, or if they suppurate, cauterize them and cause them to fill up with new flesh.

CHAP. 17. (15.)—THE SCORPIO, TWO KINDS OF IT: ONE REMEDY.

The scorpio[93] has received its appellation from the animal of that name, in consequence of the resemblance of its seeds to a scorpion's tail. The leaves of it are few in number, and it is efficacious for the sting[94] of the animal from which it derives its name. There is also another plant[95] known by the same name, and possessed of similar properties; it is destitute of leaves, has a stem like that of asparagus,[96] and a sharp point at the top, to which it owes its appellation.

CHAP. 18. (16.)—THE LEUCACANTHA, PHYLLOS, ISCHIAS, OR POLYGONATOS: FOUR REMEDIES.

The leucacantha,[97] known also as the phyllos, ischias, or polygonatos,[98] has a root like that of the cypirus, which, when chewed, has the effect of curing[99] tooth-ache; as also pains in the sides and loins, according to Hicesius, the seed or juice being taken in drink, in doses of eight drachmæ.—This plant is employed also for the cure of ruptures and convulsions.

[93] The Spartium scorpius of Linnæus, or the Scorpiurus sulcata of Linnæus: scorpion-grass, or scorpion-wort.

[94] Its properties are entirely inert, and it has no such virtues as those here mentioned. As Fée remarks, we might be quite sure, however, from the form of the seeds, that this property would be ascribed to it in the Materia Medica of the ancients.

[95] Supposed to be the Salsola tragus of Linnæus, kali, or glass-wort.

[96] Not the Asparagus officinalis, Fée says, but the Asparagus acutifolius, the stem of which is somewhat prickly.

[97] See B. xxi. cc. 56 and 104, in which last Chapter it is called "leucanthes." Desfontaines suggests that it may be either the Carduus leucographus, or the Cnicum Casabonæ.

[98] Literally, "many-cornered." "Leucacantha" means "whitethorn," and "Leucanthes" "white-flowered."

[99] Fée thinks this very improbable.

CHAP. 19. (17).—THE HELXINE: TWELVE REMEDIES.

The helxine[1] is called by some, "perdicium," from the circumstance of its forming the principal food of partridges.[2] Other persons, however, give it the name of "sideritis," and to some it is known as "parthenium." It has leaves, the shape of which is a mixture of those of the plantago and the marrubium;[3] the stalks are slight and closely packed, and are of a light red colour. The seeds, enclosed in heads resembling those of the lappa,[4] adhere to the clothes, a circumstance, it is said, to which it owes its name[5] of "helxine." We have already stated in the preceding Book[6] what are the characteristics of the plant properly so called.

The one of which we are now speaking is used for dyeing[7] wool, and is employed for the cure of erysipelas, tumours, all kinds of abscesses, and burns. The juice of it, taken in doses of one cyathus with white lead, is a cure for inflamed tumours, incipient swellings of the throat, and inveterate coughs.[8] It is good, too, for all maladies of the humid parts of the body, the tonsillary glands, for instance; and, in combination with rose oil, it is useful for varicose veins. It is employed topically for the gout, with goat suet and Cyprian wax.

[1] It must not be confounded, Fée says, with the Helxine, a tuberous root, mentioned in B. xxi. c. 56. He thinks also that Pliny is in error in giving it the name of "Perdicium," which may possibly have been a synonym of the other Helxine. Fée comes to the conclusion that the Perdicium of B. xxi. c. 62, if not the same as the Helxine of c. 56, cannot be identified; that the Helxine of B. xxi. c. 56, is the Acarna gummifera; and that the Helxine here mentioned is identical with the Perdicium of this and the next Chapter, being the Parietaria officinalis of Linnæus, parietary or wall pellitory. The confusion has probably arisen from the similarity of the name of the ἰξίνη, the plant mentioned in B. xxi. c. 56, and the ἑλξίνη, the Helxine of the present Chapter.

[2] "Perdices." As stated in the last Note, the name has probably been given in error to the Helxine or pellitory.

[3] Or horehound.

[4] See B. xxi. c. 64.

[5] From ἕλκω, to "drag."

[6] In c. 56. Properly the "Ixine." See Note [1] above.

[7] Pellitory possesses no colouring properties whatever.

[8] It has no medicinal virtues beyond acting, possibly, in some degree, as a diuretic.

CHAP. 20.—THE PERDICIUM, PARTHENIUM, URCEOLARIS, OR ASTERCUM: ELEVEN REMEDIES.

The perdicium or parthenium[9]—for[10] the sideritis is, in reality, a different plant—is known to the people of our country as the herb urceolaris,[11] and to some persons as the "astercum." The leaf of it is similar to that of ocimum, but darker, and it is found growing on tiled roofs and walls. Beaten up with a sprinkling of salt, it has all the medicinal properties of the lamium,[12] and is used in a similar manner. The juice of it, taken warm, is good, too, for suppurated abscesses; but for the cure of convulsions, ruptures, bruises, and the effects of falls from a height, or of the overturning of vehicles, it is possessed of singular virtues.

A slave, who was held in high esteem by Pericles,[13] the ruler of the Athenians, being engaged upon the buildings of a temple in the citadel, while creeping along the top of the roof, happened to fall; from the effects of which he was relieved, it is said, by this plant, the virtues whereof had been disclosed to Pericles by Minerva in a dream. Hence it is that it was first called "parthenium,"[14] and was consecrated to that goddess. It is this slave of whom there is a famous statue in molten bronze, well known as the Splanchnoptes.[15]

CHAP. 21. (18.)—THE CHAMÆLEON, IXIAS, ULOPHONON, OR CYNOZOLON; TWO VARIETIES OF IT: TWELVE REMEDIES.

The chamæleon[16] is spoken of as the "ixias," by some authors. There are two species of this plant; the white kind has a rougher leaf than the other, and creeps along the ground, erecting its prickles like the quills of a hedgehog; the root of

[9] The Parthenium of Celsus, mentioned by Pliny in B. xxi. 104, is not identical with this Perdicium (though there also he gives it that name), but is the Matricaria Parthenium of Linnæus, a different plant. See Notes to C. 19.

[10] In reference to what was said at the beginning of the preceding Chapter. [11] Or "pitcher plant." [12] See c. 16 of this Book.

[13] Plutarch, in his life of Pericles, tells the same story about the slave, but does not speak of the appearance of Minerva. He relates a story, however, of her appearance to Sylla, pointing out a spot near the Acropolis, where the Parthenium grew.

[14] Or "Virgin" plant, Minerva being called "Parthenos," the "virgin."

[15] One who "cooks entrails." See B. xxxiv. cc. 19 and 31.

[16] See B. xxi. c. 56. The white is identified with the Acarna gummifera of Linnæus, the dark or black with the Brotera corymbosa of Linnæus.

it is sweet, and the odour very powerful. In some places it secretes, just as they say incense[17] is produced, a white viscous substance beneath the axils of the leaves, about the rising of the Dog-star more particularly. To this viscous nature it owes its name of "ixias;"[17*] females[18] make use of it as a substitute for mastich. As to its name of "chamæleon,"[19] that is given to it from the varying tints of the leaves; for it changes its colours, in fact, just according to the soil, being black in one place, green in another, blue in a third, yellow elsewhere, and of various other colours as well.

A decoction of the root of the white chamæleon is employed for the cure[20] of dropsy, being taken in doses of one drachma in raisin wine. This decoction, taken in doses of one acetabulum, in astringent wine, with some sprigs of origanum in it, has the effect of expelling intestinal worms: it is good, too, as a diuretic. Mixed with polenta, the juice of it will kill dogs and swine; with the addition of water and oil, it will attract mice to it and destroy[21] them, unless they immediately drink water to counteract its effects. Some persons recommend the root of it to be kept, cut in small pieces, and suspended from the ceiling; when wanted, it must be boiled and taken with the food, for the cure of those fluxes to which the Greeks have given the name of "rheumatismi."[22]

In reference to the dark kind, some writers say that the one which bears a purple flower is the male, and that with a violet flower, the female. They grow together, upon a stem, a cubit in length, and a finger in thickness. The root of these plants, boiled with sulphur and bitumen, is employed for the cure of lichens; and they are chewed, or a decoction of them made in vinegar, to fasten loose teeth. The juice of them is employed for the cure of scab in animals, and it has the property of killing ticks upon dogs. Upon steers it takes effect like a

[17] See B. xii. c. 33.

[17*] Viscus.

[18] Olivier states (*Voyage dans l'Empire Ottoman*, i. 312) that the women in the isles of Naxos and Scio still chew this glutinous substance, in the same manner that mastich is used in other places.

[19] Fée is inclined to doubt this, and thinks that, as it is a creeping plant, the name may have been derived from χαμαί, "on the ground."

[20] Theophrastus, Galen, and Dioscorides state to the same effect, and Fée thinks it possible it may possess a certain degree of activity.

[21] Fée says that it possesses no such poisonous properties.

[22] Rheum, or catarrhs.

sort of quinsy; from which circumstance it has received the name of "ulophonon"[23] from some, as also that of cynozolon[24] from its offensive smell. These plants produce also a viscus, which is a most excellent remedy for ulcers. The roots of all the different kinds are an antidote to the sting of the scorpion.

CHAP. 22. (19.)—THE CORONOPUS.

The coronopus[25] is an elongated plant, with fissures in the leaves. It is sometimes cultivated, as the root, roasted in hot ashes, is found to be an excellent remedy for cœliac complaints.

CHAP. 23. (20.)—THE ANCHUSA: FOURTEEN REMEDIES.

The root of the anchusa,[26] too, is made use of, a plant a finger in thickness. It is split into leaves like the papyrus, and when touched it stains the hands the colour of blood; it is used for imparting rich colours to wool. Applied with cerate it heals ulcerous sores, those of aged people in particular: it is employed also for the cure of burns. It is insoluble in water, but dissolves in oil, this being, in fact, the test of its genuineness. It is administered also, in doses of one drachma, in wine, for nephretic pains, or else, if there is fever, in a decoction of balanus;[27] it is employed in a similar manner, also, for affections of the liver and spleen, and for enlarged secretions of the bile. Applied with vinegar, it is used for the cure of leprosy and the removal of freckles. The leaves, beaten up with honey and meal, are applied topically for sprains; and taken in honied wine, in doses of two drachmæ, they arrest looseness of the bowels.[28] A decoction of the root in water, it is said, kills fleas.

[23] From *οὖλον φόνον*, "dreadful death," a name which, Fée observes, it does not merit, its properties not being poisonous.

[24] From *κυνὸς ὄζη*, "smell of a dog." This is a more justifiable appellation, as the smell of it is very disagreeable.

[25] The Cochlearia coronopus of Linnæus, crow's-foot, or buck's-horn plantain.

[26] The Anchusa tinctoria of Linnæus, alkanet, orcanet, or dyers' bugloss.

[27] See B. xii. c. 46.

[28] This plant is no longer used for medicinal purposes; but Fée thinks that, as the leaves in all probability contain nitrate of potash, they may have diuretic properties.

CHAP. 24.—THE PSEUDOANCHUSA, ECHIS, OR DORIS: THREE REMEDIES.

There is another plant, similar to the preceding one, and hence known as the "pseudoanchusa,"[29] though by some it is called "echis,"[30] or "doris," as well as by many other names. It is more downy than the other plant, however, and not so substantial; the leaves, too, are thinner, and more drooping. The root of it, treated with oil, does not give out any red juice, a sign by which it is distinguished from the genuine anchusa. The leaves of this plant, or the seed, taken in drink, are extremely efficacious for the stings of serpents; the leaves, too, are applied topically to the wound; and the powerful smell of them will keep serpents at a distance. A preparation of this plant is taken, also, as a potion, for affections of the vertebræ. The Magi recommend that the leaves of it should be plucked with the left hand, it being mentioned at the same time for whom they are being gathered: after which, they are to be worn as an amulet, attached to the person, for the cure of tertian fevers.[31]

CHAP. 25. (21.)—THE ONOCHILON, ARCHEBION, ONOCHELIS, RHEXIA, OR ENCHRYSA: THIRTY REMEDIES.

There is another plant, too, the proper name of which is "onochilon,"[32] but which some people call "anchusa," others "archebion," and others, again, "onochelis," or "rhexia," and, more universally, "enchrysa." This plant has a diminutive stem, a purple flower, rough leaves and branches, and a root the colour of blood at harvest-time, though dark and

[29] The Anchusa Italica of Linnæus, according to Fée, false alkanet, or wild bugloss. Though resembling the genuine plant in its external features, it has no colouring properties. Sprengel identifies it with the Lithospermum fruticosum of Linnæus, a plant, as Fée remarks, very different in its appearance from the genuine alkanet.

[30] In erroneously giving it this name, Fée remarks that Pliny has confounded the pseudoanchusa with the ἔχιον of the Greeks, the Echium rubrum of Linnæus, and has attributed to it the characteristics of the latter plant.

[31] Fée remarks, that all that Pliny says of the medicinal properties of this plant does not merit the honour of a discussion.

[32] Fée identifies it with the Echium Creticum of Linnæus. Desfontaines takes it to be the Anchusa tinctoria of Linnæus. Fée is of opinion that the name really given to this plant was "enchrysa," and not "anchusa."

swarthy at other times. It grows in sandy soils, and is extremely efficacious for the stings of serpents, vipers in particular, the roots or leaves of it being taken indifferently with the food, or in the drink. It developes its virtues at harvest-time, more especially: the leaves of it, when bruised, have just the smell of a cucumber. This plant is prescribed, in doses of three cyathi, for prolapsus of the uterus, and, taken with hyssop, it expels tape-worms. For pains in the liver or kidneys, it is taken in hydromel, if the patient shows symptoms of fever, but if not, in wine. With the root of it a liniment is made, for the removal of freckles and leprous sores; and it is asserted that persons who carry this root about them will never be attacked by serpents.

There is another[33] plant, again, very similar to this, with a red flower, and somewhat smaller. It is applied to the same uses as the other; it is asserted, too, that if it is chewed, and then spit out upon a serpent, it will cause its instantaneous death.

CHAP. 26. — THE ANTHEMIS, LEUCANTHEMIS, LEUCANTHEMUM, CHAMÆMELUM, OR MELANTHIUM; THREE VARIETIES OF IT: ELEVEN REMEDIES.

The anthemis has been highly extolled by Asclepiades. Some persons call it "leucanthemis,"[34] some leucanthemum, others, again, "eranthemis,"[35] from its flowering in spring, and others "chamæmelon,"[36] because it has a smell like that of an apple: sometimes, too, it is called "melanthion."[37] There are three varieties of this plant, which only differ from one another in the flower; they do not exceed a palm in height, and they bear small blossoms like those of rue, white, yellow,[38] or purple.

This plant is mostly found in thin, poor soils, or growing near foot-paths. It is usually gathered in spring, and put by

[33] The Lithospermum fruticosum of Linnæus; cromill, or stone-crap.

[34] Fée, adopting the opinion of Sibthorpe, thinks that under these names Pliny is speaking of *several* varieties of the Anthemis, or camomile, and he identifies them as follows: the Leucanthemis, or white camomile, he considers to be the same as the Anthemis Chia of Linnæus; the Eranthemis to be the Anthemis rosea of Sibthorpe; the Melanthion to be the Anthemis tinctoria, or dyers' camomile of Sibthorpe: and the Chamæmelon to be the Matricaria chamomilla of Linnæus, the common camomile. Sprengel differs from these opinions as to the identification of the several varieties.

[35] "Spring flower."

[36] "Ground apple."

[37] "Black flower."

[38] "Malinis," apple-colour.

for the purpose of making chaplets. At the same season, too, medical men pound the leaves, and make them up into lozenges, the same being done with the flowers also, and the root. All the parts of this plant are administered together, in doses of one drachma, for the stings of serpents of all kinds. Taken in drink, too, they bring away the dead fœtus, act as an emmenagogue and diuretic, and disperse calculi of the bladder. The anthemis is employed, also, for the cure of flatulency, affections of the liver, excessive secretions of the bile, and fistulas of the eye; chewed, it heals running sores. Of all the different varieties, the one that is most efficacious for the treatment of calculi is that with the purple flower,[39] the leaves and stem[40] of which are somewhat larger than those of the other kinds. Some persons, and with strict propriety, give to this last the name of "eranthemis."

CHAP. 27.—THE LOTUS PLANT: FOUR REMEDIES.

Those who think that the lotus is nothing but a tree only, can easily be refuted, if upon the authority of Homer[41] only; for that poet names the lotus first of all among the herbs which grow to administer to the pleasures of the gods. The leaves of this plant,[42] mixed with honey, disperse the marks of sores, argema,[43] and films upon the eyes.

CHAP. 28.—THE LOTOMETRA: TWO REMEDIES.

The lotometra[44] is a cultivated lotus; with the seed of it, which resembles millet, the shepherds in Egypt make a coarse bread, which they mostly knead with water or milk. It is said, however, that there is nothing lighter or more wholesome than this bread, so long as it is eaten warm; but that when it gets cold, it becomes heavy and more difficult of digestion. It is a well-known fact, that persons who use it as a diet are

[39] See Note [34].

[40] "Fruticis." The camomile is still extensively used in medicine for fomentations, and the decoction of it is highly esteemed, taken fasting, as a tonic.

[41] Il. xiv. 347.

[42] The Melilotus officinalis of Linnæus. See B. xiii. c. 32, and the Notes.

[43] White specks in the black of the eye, with a red tinge.

[44] Or "Mother of the Lotus;" the Nymphæa lotus of Linnæus. See B. xiii. c. 32. "Ex loto sata" may probably mean that it springs from the seed of the lotus, in which case, as Fée remarks, it must be identified with the Lotus.

never attacked by dysentery, tenesmus, or other affections of the bowels; hence it is, that this plant is reckoned among the remedies for that class of diseases.

CHAP. 29.—THE HELIOTROPIUM, HELIOSCOPIUM, OR VERRUCARIA: TWELVE REMEDIES. THE HELIOTROPIUM, TRICOCCUM, OR SCORPIURON: FOURTEEN REMEDIES.

We have spoken more than once[45] of the marvels of the heliotropium, which turns[46] with the sun, in cloudy weather even, so great is its sympathy with that luminary. At night, as though in regret, it closes its blue flower.

There are two species of heliotropium, the tricoccum[47] and the helioscopium,[48] the latter being the taller of the two, though they neither of them exceed half[49] a foot in height. The helioscopium throws out branches from the root, and the seed of it, enclosed in follicules,[50] is gathered at harvest-time. It grows nowhere but in a rich soil, a highly-cultivated one more particularly; the tricoccum, on the other hand, is to be found growing everywhere. I find it stated, that the helioscopium, boiled, is considered an agreeable food, and that taken in milk, it is gently laxative[51] to the bowels; while, again, a decoction of it, taken as a potion, acts as a most effectual purgative. The

[45] B. xviii. c. 67, and B. xix. c. 58.

[46] This apparent marvel is owing to the necessity of light to certain flowers for the purposes of fecundation, while those which open at night require more moisture than light for their reproduction.

[47] Or "three-grained," probably, Fée says, from the three cells in the capsule. He identifies this plant with the Croton tinctorium of Linnæus, the turnsole, or sun-flower.

[48] Fée identifies it with the Heliotropium Europæum of Linnæus, the heliotrope, or verrucaria. The Heliotropium of Ovid and other poets, with a violet or blue flower, is, no doubt, a different plant, and is identified by Sprengel, Desfontaines, and Fée with the Hesperis matronalis of Linnæus, rocket or julian, or, as we not inaptly call it, from its pleasant smell, cherry-pie. Pliny speaks of his Heliotropium as having a "blue flower," cœruleum. This is probably an error on his part, and it is supposed by commentators that he read in the Greek text *ὑποπόρφυρον*, "somewhat purple," by mistake for *ὑπόπυῤῥον*, "somewhat red," as we find it.

[49] As known at the present day, they grow to a much greater height than this.

[50] This, Fée remarks, cannot apply to either the Heliotropium Europæum or the Croton tinctorium. He thinks it not improbable that Pliny may have named one plant, and given a description of another.

[51] The Heliotropium Europæum, Fée says, has no medicinal properties.

juice of this plant is collected in summer, at the sixth [52] hour of the day; it is usually mixed with wine, which makes [53] it keep all the better. Combined with rose-oil, it alleviates head-ache. The juice extracted from the leaves, combined with salt, removes warts; from which circumstance our people have given this plant the name of "verrucaria,"[54] although, from its various properties, it fully merits a better name. For, taken in wine or hydromel, it is an antidote to the venom of serpents and scorpions,[55] as Apollophanes and Apollodorus state. The leaves, too, employed topically, are a cure for the cerebral affections of infants, known as "siriasis,"[56] as also for convulsions, even when they are epileptic. It is very wholesome, too, to gargle the mouth with a decoction of this plant. Taken in drink, it expels tapeworm and gravel, and, with the addition of cummin, it will disperse calculi. A decoction of the plant with the root, mixed with the leaves and some suet of a he-goat, is applied topically for the cure of gout.

The other kind, which we have spoken[57] of as being called the "tricoccum," and which also bears the name of "scorpiuron,"[58] has leaves that are not only smaller than those of the other kind, but droop downwards towards the ground: the seed of it resembles a scorpion's tail, to which, in fact, it owes its latter appellation. It is of great efficacy for injuries received from all kinds of venomous insects and the spider known as the "phalangium," but more particularly for the stings of scorpions, if applied topically.[59] Those who carry it about their person are never stung by a scorpion, and it is said that if a circle is traced on the ground around a scorpion with a sprig of this plant, the animal will never move out of it, and that if a scorpion is covered with it, or even sprinkled with the water in which it has been steeped, it will die that instant. Four

[52] Midday, namely.

[53] "Sic firmior."

[54] The "wart plant;" from "verruca," a "wart."

[55] This notion arose probably, Fée thinks, from the clusters of its flowers resembling the tail of a scorpion in appearance.

[56] Probably an inflammation of the membranes of the brain.

[57] At the beginning of this Chapter.

[58] "Scorpion's tail." Dioscorides gives this name to the Helioscopium, or great Heliotropium.

[59] Fée is surprised that no mention is made of its colouring properties, it being extremely rich in the colouring principle, and having been much used in former times for dyeing purposes.

grains of the seed, taken in drink, are said to be a cure for the quartan fever, and three for the tertian; a similar effect being produced by carrying the plant three times round the patient, and then laying it under his head. The seed, too, acts as an aphrodisiac, and, applied with honey, it disperses inflamed tumours. This kind of heliotropium, as well as the other, extracts warts radically,[60] and excrescences of the anus. Applied topically, the seed draws off corrupt blood from the vertebræ and loins; and a similar effect is produced by taking a decoction of it in chicken broth, or with beet and lentils. The husks[61] of the seed restore the natural colour to lividities of the skin. According to the Magi, the patient himself should make four knots in the heliotropium for a quartan, and three for a tertian fever, at the same time offering a prayer that he may recover to untie them, the plant being left in the ground meanwhile.

CHAP. 30.—THE ADIANTUM, CALLITRICHOS, TRICHOMANES, POLYTRICHOS, OR SAXIFRAGUM; TWO VARIETIES OF IT: TWENTY-EIGHT REMEDIES.

Equally marvellous, too, in other respects, is the adiantum;[62] it is green in summer, never dies in the winter, manifests an aversion to water, and, when sprinkled with water or dipped in it, has all the appearance of having been dried, so great is its antipathy to moisture; a circumstance to which it owes the name of "adiantum,"[63] given to it by the Greeks. In other respects, it is a shrub which might be well employed in ornamental gardening.[64] Some persons give it the name of

[60] This notion, Fée says, was long attached to the Heliotropium Europæum, and to it, it is indebted for its present name of "verrucaria."

[61] "Cortex seminis."

[62] Fée identifies it with the Asplenium trichomanes of Linnæus, spleenwort, or ceterach. The Adiantum of Hippocrates and other Greek writers, he takes to be the Adiantum capillus Veneris of Linnæus, Venus' hair, or maiden hair. Though Pliny would seem not to have been acquainted with the latter plant, he ascribes to the first one many of its properties and characteristics, deriving his information, probably, from a writer who was acquainted with both. See B. xxi. c. 60.

[63] From *ἀ*, "not," and *διαίνω*, "to wet." This is owing, Fée remarks, to the coat of waxen enamel or varnish with which the leaves are provided. The same is the case also with the leaf of the cabbage and other plants.

[64] The Asplenium trichomanes, Fée says, would not admit of being clipped for ornamental gardening.

"callitrichos,"[65] and others of "polytrichos," both of them bearing reference to its property of imparting colour to the hair. For this purpose, a decoction of it is made in wine with parsley-seed, large quantities of oil being added, if it is desired to make the hair thick and curly as well: it has also the property of preventing the hair from coming off.

There are two kinds of this plant, one being whiter than the other, which last is swarthy and more stunted. It is the larger kind that is known as the "polytrichos," or, as some call it, the "trichomanes." Both plants have tiny branches of a bright black colour, and leaves like those of fern, the lower ones being rough and tawny, and all of them lying close together and attached to footstalks arranged on either side of the stem: of root, so to say, there is nothing.[66] This plant frequents umbrageous rocks, walls sprinkled with the spray of running water, grottoes of fountains more particularly, and crags surrounded with streamlets, a fact that is all the more remarkable in a plant which derives no benefit from water.

The adiantum is of singular efficacy in expelling and breaking calculi of the bladder, the dark kind in particular; and it is for this reason, in my opinion, rather than because it grows upon stones, that it has received from the people of our country its name of "saxifragum."[67] It is taken in wine, the usual dose being a pinch of it in three fingers. Both these plants are diuretics, and act as an antidote to the venom of serpents and spiders: a decoction of them in wine arrests looseness of the bowels. A wreath of them, worn on the head, alleviates head-ache. For the bite of the scolopendra they are applied topically, but they must be removed every now and then, to prevent them from cauterizing the flesh:[68] they are employed in a similar manner also for alopecy.[69] They disperse scrofulous sores, scurf on the face, and running ulcers of the head. A decoction of them is useful also for asthma, affections of the liver and spleen, enlarged secretions of the gall,

[65] "Fine hair," and "thick hair." These names originated more probably in the appearance of the plant than in any effects it may have produced as a dye for the hair.

[66] On the contrary, Fée says, the root is composed of numerous fibres.

[67] "Stone-breaking."

[68] Fée is of opinion that they possess no such property.

[69] Loss of the hair.

and dropsy. In combination with wormwood, they form a liniment for strangury and affections of the kidneys; they have the effect also of bringing away the after-birth, and act as an emmenagogue. Taken with vinegar or juice of bramble-berries, they arrest hæmorrhage. Combined with rose-oil they are employed as a liniment for excoriations on infants, the parts affected being first fomented with wine. The leaves, steeped in the urine of a youth who has not arrived at puberty, and beaten up with saltpetre, compose a liniment which, it is said, prevents wrinkles from forming on the abdomen in females. It is a general belief that partridges and cocks are rendered more pugnacious if this plant is mixed with their food; and it is looked upon as particularly beneficial for cattle.

CHAP. 31. (22.)—THE PICRIS; ONE REMEDY. THE THESION; ONE REMEDY.

The picris[70] derives its name from its intense bitterness, as we have previously stated. The leaf of it is round; it is remarkably efficacious for the removal of warts.

The thesium,[71] too, has a bitterness not unlike it: it is a powerful purgative, for which purpose it is employed bruised in water.

CHAP. 32.—THE ASPHODEL; FIFTY-ONE REMEDIES.

The asphodel[72] is one of the most celebrated of all the plants, so much so, indeed, that by some persons it has been called "heroum."[73] Hesiod has mentioned the fact of its growing in rivers, and Dionysius distinguishes it into male and female.[74] It has been observed that the bulbs of it, boiled with a ptisan, are remarkably good for consumption and phthisis,[75] and that

[70] See B. xxi. c. 65. The Picris asplenioides of Linnæus, Fée thinks, though Sprengel identifies it with the Helminthia echioides of Linnæus; but the leaves of that plant are not round.

[71] See B. xxi. c. 67.

[72] See B. xxi. c. 68.

[73] "Plant of the heroes."

[74] Mere varieties of the plant, so called with reference, probably, to the relative energy of their properties.

[75] Regarded in a medicinal point of view the bulb of the asphodel possesses some emollient properties, and nothing more. As an application to sores and abscesses it may reduce the inflammation, and being rich in mucilage, the pulp may form a nourishing food. All the other statements as to its medicinal properties are, as Fée remarks, quite fabulous.

bread in which they have been kneaded up with the meal, is extremely wholesome. Nicander[76] recommends also, for the stings of serpents and scorpions, either the stalk, which we have already[77] spoken of under the name of "anthericus," or else the seed or bulbs, to be taken in wine, in doses of three drachmæ; and he says that these should be strewed beneath the bed, if there is any apprehension of their presence. The asphodel is prescribed also for wounds inflicted by marine animals of a venomous nature, and the bite of the land scolopendra. It is quite wonderful how the snails, in Campania, seek the stalk of this plant, and dry it by extracting the inside. The leaves, too, are applied with wine to wounds made by venomous animals, and the bulbs are beaten up with polenta and similarly used for affections of the sinews and joints. It is also a very good plan to rub lichens with them chopped up and mixed with vinegar, and to apply them in water to putrid sores, as also to inflammations of the testes or mamillæ. Boiled in lees of wine, and applied in a linen pledget, they are used for the cure of defluxions of the eyes.

Whatever the malady may happen to be, it is generally in a boiled[78] state that the bulbs are employed; but for foul ulcers of the legs and for chaps upon any part of the body, they are dried and reduced to powder. The bulbs are usually gathered in autumn,[79] a period when their medicinal properties are most fully developed. The juice extracted from them pounded, or else a decoction of them, is good, mixed with honey, for pains in the body: it is employed also with dried iris and a little salt by those who wish to impart an agreeable odour to the person. The leaves are used for the cure of the various maladies above mentioned, as also, boiled in wine, for scrofulous sores, inflamed tumours, and ulcers of the face. The ashes of the root are a remedy for alopecy and chaps on the feet; and an extract of the root, boiled in oil, is good for burns and chilblains. It is injected also into the ears for deafness, and, for tooth-ache, it is poured into the ear opposite to the part affected. A moderate dose of the root, taken in drink, acts as

[76] Theriaca, p. 39. [77] In B. xxi. c. 68.

[78] This practice, as Fée remarks, was based on sound principles, the acrid properties of the bulbs being removed by boiling.

[79] Most medicinal roots are gathered at this period, their properties being, as Pliny says, most fully developed in the autumn.

a diuretic and emmenagogue; it is good also for pains in the sides, ruptures, convulsions, and coughs, in doses of one drachma, taken in wine. Chewed, the root promotes vomiting, but the seed, taken internally, disorders the bowels.

Chrysermus used to employ a decoction of the root, in wine, for imposthumes of the parotid glands; and he has prescribed it, in combination with cachrys,[80] in wine, for the cure of scrofulous sores. Some persons say that if, after applying the root to the sores, a part of it is hung up in the smoke to dry, and not taken down till the end of four days, the sores will gradually dry up with this portion of the root. Sophocles[81] used to employ it both ways, boiled and raw, for the cure of gout; and he prescribes it, boiled in oil, for chilblains, and, in vinegar, for jaundice and dropsy. It has been stated, also, that, used as a friction with wine and honey, or taken in drink, it acts as an aphrodisiac. Xenocrates assures us, too, that a decoction of the root in vinegar removes lichens, itch-scabs, and leprous sores; and that a decoction of it, with henbane and tar, has a similar effect, and is good also for the removal of bad odours[82] of the armpits and thighs: he states, also, that if the head is well rubbed with the root, being first shaved, the hair will curl all the better for it. Simus prescribes a decoction of it, in wine, to be taken for calculi in the kidneys; and Hippocrates recommends the seed for obstructions of the spleen. The root, or else a decoction of it, applied topically, restores the hair in beasts of burden, where it has been lost by ulcerations or scab. It has the effect, too, of driving away rats and mice, and of exterminating them, if placed before their holes.

CHAP. 33.—THE HALIMON: FOURTEEN REMEDIES.

Some authors have thought that it is the asphodel that is called "halimon" by Hesiod, an opinion which appears to me ill-founded; halimon[83] being the name of a distinct plant,

[80] See B. xvi. c. 11.

[81] Other readings are Diocles, Socles, and Socrates. If "Sophocles" is the correct reading, all memorials of this physician have perished, beyond the mention made of him by Cœlius Aurelianus, Chron. c. i.

[82] "Vitia."

[83] The Atriplex halimus of Linnæus, sea orach. Belon says that it is found in great abundance in Candia, the ancient Crete, where it is known as "halimatia," and the tops of the stalks are used as food.

which has been the occasion of no few mistakes committed by writers. According to some, it is a tufted shrub, white, destitute of thorns, and with leaves like those of the olive, only softer; which eaten boiled, are an agreeable food. The root, they say, taken in doses of one drachma in hydromel, allays gripings of the bowels, and is a cure for ruptures and convulsions. Others, again, pronounce it to be a vegetable growing near the sea-shore,[84] of a salt taste—to which, in fact, it owes its name—with leaves somewhat round but elongated, and much esteemed as an article of food. They say, too, that there are two species of it, the wild and the cultivated,[85] and that, mixed with bread, they are good, both of them, for dysentery, even if ulceration should have supervened, and are useful for stomachic affections, in combination with vinegar. They state, also, that this plant is applied raw to ulcers of long standing, and that it modifies the inflammation of recent wounds, and the pain attendant upon sprains of the feet and affections of the bladder. The wild halimon, they tell us, has thinner leaves than the other, but is more effectual as a medicament in all the above cases, as also for the cure of itch, whether in man or beast. The root, too, according to them, employed as a friction, renders the skin more clear, and the teeth whiter; and they assert that if the seed of it is put beneath the tongue, no thirst will be experienced. They state, also, that this kind is eaten as well as the other, and that they are, both of them, preserved.

Crateuas has spoken of a third[86] kind also, with longer leaves than the others, and more hairy: it has the smell of the cypress, he says, and grows beneath the ivy more particularly. He states that this plant is extremely good for opisthotony and contractions of the sinews, taken in doses of three oboli to one sextarius of water.

[84] Hence its name, ἅλιμον, from ἁλς, the "sea," and not, as Pliny says, from its salt taste.

[85] "Mitius." Fée says that if this word means "cultivated," the plant mentioned cannot be the Atriplex halimus; in which case he is inclined to identify it with the Atriplex portulacoides of Linnæus; the leaves and young stalks of which, preserved in vinegar, have an agreeable taste.

[86] Some other plant, probably, Fée thinks.

CHAP. 34.—THE ACANTHUS, PÆDEROS, OR MELAMPHYLLOS: FIVE REMEDIES.

The acanthus[87] is a plant that grows in cities, and is used in ornamental gardening. It has a broad, long leaf, and is used as a covering for the margins of ornamental waters and of parterres in gardens.[88] There are two varieties of it; the one that is thorny[89] and crisped is the shorter of the two; the other, which is smooth,[90] is by some persons called "pæderos,"[91] and by others "melamphyllos."[92] The root of this last is remarkably good for burns and sprains; and, boiled with the food, a ptisan more particularly, it is equally good for ruptures, spasms, and patients who are in apprehension of phthisis. The root is also beaten up and applied warm for hot gout.

CHAP. 35.—THE BUPLEURON: FIVE REMEDIES.

The bupleuron[93] is reckoned by the Greeks in the number of the leguminous plants which grow spontaneously. The stem of it is a cubit in height, the leaves are long and numerous, and the head resembles that of dill. It has been extolled as an aliment by Hippocrates, and for its medicinal properties by Glaucon and Nicander. The seed of it is good for the stings of serpents; and the leaves, or else the juice, applied as a liniment with wine, bring away the after-birth. The leaves, also, in combination with salt and wine, are applied to

[87] As to the Acanthus or thorn, in a more general sense, see B. xxiv. c. 66, and the Notes.

[88] Pliny the Younger speaks of the Acanthus being used for a similar purpose, Epist. B. v. Ep. 6.

[89] The Acanthus spinosus of Linnæus.

[90] The Acanthus mollis of Linnæus; the brankursine.

[91] "Lad's love."

[92] "Black-leafed." Fée thinks it probable that this name may have been given to the variety "niger," of Miller, which grows in great abundance in Sicily and Italy.

[93] "Bull's side," apparently. Fée says that the identification of this plant is quite uncertain; the Buplevrum rigidum of Linnæus, the Buplevrum Baldense of Willdenow, and the Ammi majus of Linnæus, having been suggested. The first, he thinks, could never have been used as a vegetable, and the second is only found on Mount Baldo in Carniola, and in Croatia. Though the Ammi majus is more than a cubit in height, and could never have been used as a vegetable, he looks upon it as the most likely of the three. The seeds of it were formerly used as a carminative.

scrofulous sores. The root is prescribed in wine for the stings of serpents, and as a diuretic.

CHAP. 36.—THE BUPRESTIS: ONE REMEDY.

With a remarkable degree of inconsistency, the Greek writers, while praising the buprestis[94] as an aliment, point out certain antidotes[95] to it, as though it were a poison. The very name, however, proves to a certainty that it is poisonous to cattle, and it is generally admitted that, on tasting it, they burst[96] asunder: we shall, therefore, say no more about it. Is there any reason, in fact, why, when we are speaking of the materials employed in making our grass crowns, we should describe a poison? or really ought we to enlarge upon it only to please the libidinous fancies of those who imagine that there is not a more powerful aphrodisiac in existence than this, when taken in drink?

CHAP. 37.—THE ELAPHOBOSCON: NINE REMEDIES.

The elaphoboscon[97] is a ferulaceous plant, articulated, and about a finger in thickness. The seed of it is like that of dill, hanging in umbels resembling those of hart-wort in appearance, but not bitter. The leaves are very like those of olusatrum.[98] This plant, too, is highly spoken of as an article of food; in addition to which, it is preserved and kept as a diuretic[99] and for the purpose of assuaging pains in the sides, curing ruptures and convulsions, and dispelling flatulency and colic. It

[94] Sprengel and Desfontaines consider it to be the Buplevrum rotundifolium: but Fée is of a contrary opinion, and thinks that it is impossible to identify it.

[95] Though Hardouin attempts to defend him, it is more than probable that it is Pliny himself who is in error here; and that he has confounded the plant Buprestis with the insect of that name, which belongs to the class of Cantharides, and received its name (burn-cow) from its fatal effects when eaten by cattle.

[96] See B. xxx. c. 10.

[97] "Stag's food." Fée adopts the opinion of Sprengel and Sibthorpe, that this is the Pastinaca sativa of Linnæus, the cultivated parsnip. Desfontaines identifies it with the Sium sisarum; but, as Fée says, that plant is but rarely found in Greece.

[98] See B. xx. c. 18. For the olusatrum, see B. xx. c. 46.

[99] The parsnip is no longer employed for its medicinal properties; but for a long time, the seed was looked upon as a diuretic and febrifuge. The root contains a considerable quantity of saccharine matter.

is used, too, for the cure of wounds inflicted by serpents and all kinds of animals that sting; so much so, indeed, that, as the story goes, stags, by eating of it, fortify themselves against the attacks of serpents. The root, too, applied topically, with the addition of nitre, is a cure for fistula, but, when wanted for this purpose, it must be dried first, so as to retain none of the juice; though, on the other hand, this juice does not at all impair its efficacy as an antidote to the poison of serpents.

CHAP. 38.—THE SCANDIX: NINE REMEDIES. THE ANTHRISCUM: TWO REMEDIES.

The scandix,[1] too, is reckoned by the Greeks in the number of the wild vegetables, as we learn from Opion and Erasistratus. Boiled, it arrests[2] looseness of the bowels; and the seed of it, administered with vinegar, immediately stops hiccup. It is employed topically for burns, and acts as a diuretic; a decoction of it is good, too, for affections of the stomach, liver, kidneys, and bladder. It is this plant that furnished Aristophanes with his joke[3] against the poet Euripides, that his mother used to sell not real vegetables, but only scandix.

The anthriscum[4] would be exactly the same plant as the scandix, if its leaves were somewhat thinner and more odoriferous. Its principal virtue is that it reinvigorates the body when exhausted by sexual excesses, and acts as a stimulant upon the enfeebled powers of old age. It arrests leucorrhœa in females.

CHAP. 39.—THE IASIONE; FOUR REMEDIES.

The iasione,[5] which is also looked upon as a wild vegetable, is a creeping plant, full of a milky juice: it bears a white

[1] Sprengel identifies it with the Chærophyllum sativum of Linnæus, the scandix cerifolium, our common chervil; but Fée considers it to be the same as the Scandix pecten Veneris of Linnæus, the Venus' comb chervil. Pliny has mentioned a "scandix" also in B. xxi. c. 52, but erroneously, Fée thinks.

[2] It is not used for any medicinal purposes at the present day.

[3] Acharn. A. ii. sc. 4: "Get some scandix from your mother, and give it me." The same joke also appears in the "Equites;" and A. Gellius, B. xv. c. 20, says that Theopompus speaks of the mother of Euripides as having been a greengrocer.

[4] Fée identifies it with the Anthriscus odoratus of Linnæus, the cultivated chervil. See B. xxi. c. 52.

[5] See B. xxi. c. 65.

flower, the name given to which is "concilium." The chief recommendation of this plant, too, is that it acts as an aphrodisiac. Eaten with the food, raw, in vinegar, it promotes the secretion of the milk in nursing women. It is salutary also for patients who are apprehensive of phthisis; and, applied to the head of infants, it makes the hair grow, and renders the scalp more firm.

CHAP. 40.—THE CAUCALIS: TWELVE REMEDIES.

The caucalis,[6] too, is an edible plant. It resembles fennel in appearance, and has a short stem with a white flower;[7] it is usually considered a good cordial.[8] The juice, too, of this plant is taken as a potion, being particularly recommended as a stomachic, a diuretic, an expellent of calculi and gravel, and for the cure of irritations of the bladder. It has the effect, also, of attenuating morbid secretions[9] of the spleen, liver, and kidneys. The seed of it acts as an emmenagogue, and dispels the bilious secretions after child-birth: it is prescribed also, for males, in cases of seminal weakness. Chrysippus is of opinion that this plant promotes conception; for which purpose it is taken by women in wine, fasting. It is employed in the form of a liniment, for wounds inflicted by marine animals of a venomous nature, at least we find it so stated by Petrichus in his poem.[10]

CHAP. 41.—THE SIUM: ELEVEN REMEDIES.

Among these plants there is reckoned also the sium:[11] it grows in the water, has a leaf broader than that of parsley, thicker, and of a more swarthy colour, bears a considerable quantity of seed, and has the taste of nasturtium. It is an active diuretic, is very good for the kidneys and spleen, and acts as an emmenagogue, either eaten by itself as an aliment,[12] or

[6] See B. xxi. c. 52.

[7] This is the Caucalis grandiflora of Linnæus, Fée thinks.

[8] "Medicine for the heart." All these statements as to its medicinal properties, are quite erroneous, Fée says.

[9] "Pituitas."

[10] On Antidotes for the stings of serpents. See end of B. xix.

[11] The Sium angustifolium has been named, but Fée prefers identifying it with the Sium latifolium of Linnæus, water-parsley.

[12] Fée says that at the present day it is held in suspicion as an article of food, and that it is said to produce madness in ruminating animals. He thinks it not improbable that Pliny here attributes to it some of the properties which in reality belong to cresses.

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taken in the form of a decoction; the seed of it is taken in wine, in doses of two drachmæ. It disperses calculi in the bladder, and neutralizes the action of water which tends to their formation. Used in the form of an injection, it is good for dysentery, and applied topically, for the removal of freckles. It is applied by females, at night, for the removal of spots on the face, a result which it produces almost instantaneously. It has the effect also of assuaging hernia, and is good for the scab in horses.

CHAP. 42.—THE SILLYBUM.

The sillybum[13] resembles the white chamæleon, and is a plant quite as prickly. In Cilicia, Syria, and Phœnicia, the countries where it grows, it is not thought worth while to boil it, the cooking of it being so extremely troublesome, it is said. It is of no use whatever in medicine.

CHAP. 43.—THE SCOLYMOS OR LIMONIA: FIVE REMEDIES.

The scolymos,[14] too, is used as an aliment[15] in the East, where it has also the name of "limonia."[16] This is a shrub-like plant, which never exceeds a cubit in height, with tufted leaves and a black root, but sweet. Eratosthenes speaks highly of it as a diet used by the poor. It is said to possess diuretic properties in a very high degree, and to heal lichens and leprous sores, applied with vinegar. Taken in wine it acts as an aphrodisiac, according to the testimony of Hesiod[17] and Alcæus; who have stated in their writings, that while it is in blossom, the song of the grasshopper is louder than at other times, women more inflamed with desire, and men less inclined to amorous intercourse; and that it is by a kind of foresight on the part of Nature that this powerful stimulant is then in its greatest perfection. The root, too, used without the pith, corrects the noisome odour of the armpits, in doses of one ounce to two heminæ of Falernian wine; the mixture being boiled down to

[13] See B. xxvi. c. 25. Sprengel identifies it with the Carduus marianus of Linnæus. Fée inclines, however, to the belief that it is the Sonchus palustris of Linnæus; the marsh sow-thistle.

[14] Sprengel identifies it with the Scolymus maculatus of Linnæus, but Fée prefers the Scolymus Hispanicus of Linnæus, the Spanish thistle.

[15] Fée says that the Scolymus grandiflorus is still eaten in Barbary.

[16] The "meadow-plant."

[17] Works and Days, l. 582.

one third, and taken fasting after the bath, as also after meals, a cyathus at a time. It is a remarkable thing, but Xenocrates assures us that he has ascertained it experimentally, that these bad odours are carried off by the urine.

CHAP. 44.—THE SONCHOS; TWO VARIETIES: FIFTEEN REMEDIES.

The sonchos,[18] too, is edible —at least, it was this that, according to Callimachus, Hecale[19] set before Theseus. There are two kinds, the white[20] and the black:[21] they are, both of them, similar to the lettuce, except that they are prickly, with a stem a cubit in height, angular, and hollow within; when broken, the stem gives out an abundance of milky juice. The white kind, which derives its colour from the milk it contains, is good for hardness of breathing, if eaten dressed with seasoning like the lettuce. Erasistratus says that it carries off calculi by the urine, and that, chewed, it is a corrective of bad breath. The juice of it, taken warm in doses of three cyathi, with white wine and oil, facilitates delivery, but the patient must be careful to walk about immediately after drinking it: it is also given in broth.

A decoction of the stalk renders the milk more abundant in nursing women, and improves the complexion of the infants suckled by them; it is also remarkably beneficial for females when the milk coagulates. The juice of it is used as an injection for the ears, and is taken warm in doses of one cyathus, for strangury, as also for gnawing pains of the stomach, with cucumber seed and pine nuts. It is employed topically for abscesses of the rectum, and is taken in drink for the stings of serpents and scorpions, the root also being applied to the wounds. The root, boiled in oil, with the rind of a pomegranate, is a

[18] The Sonchus oleraceus of Linnæus, the common sow-thistle.

[19] A poor old woman, who hospitably entertained Theseus when on his expedition for the purpose of slaying the Marathonian bull. Theseus instituted a sacrifice at Athens in honour of her. See Ovid, Remed. Am. l. 747, and Callim. Fragm. 40.

[20] The Sonchus arvensis of Linnæus, the field sow-thistle.

[21] The Sonchus oleraceus asper of Linnæus, the prickly-leafed sow-thistle. These plants are eaten as a salad in some countries. They possess but little energy in a medicinal point of view, but they are cooling and slightly laxative. The marvels here related by Pliny, Fée says, are entirely fabulous.

remedy for diseases of the ears—all these remedies, however, be it remembered, are derived from the white kind.

As to the black sonchos, Cleemporus forbids it to be eaten, as being productive of diseases, but at the same time he approves of the use of the white. Agathocles, however, goes so far as to assert that the juice of the black kind is an antidote for poisoning by bulls' blood; and, indeed, it is generally agreed that the black sonchos has certain refreshing properties; for which reason cataplasms of it may be advantageously applied with polenta. Zeno recommends the root of the white kind for strangury.

CHAP. 45.—THE CONDRION OR CHONDRYLLA: SIX REMEDIES.

The condrion,[22] or chondrylla, has leaves, eaten away, as it were, at the edges, and similar to those of endive, a stalk less than a foot in length and full of a bitter juice, and a root resembling that of the bean, and occasionally very ramified. It produces, near the surface of the earth, a sort of mastich,[23] in a tubercular form, the size of a bean; this mastich, it is said, employed as a pessary, promotes the menstrual discharge. This plant, pounded whole with the roots, is divided into lozenges, which are employed for the stings of serpents, and probably with good effect; for field mice, it is said, when injured by those reptiles, are in the habit of eating this plant. A decoction of it in wine arrests looseness of the bowels, and makes a most excellent substitute for gum, as a bandoline for the eye-lashes,[24] even when the hairs are most stubborn. Dorotheus says, in his poems, that it is extremely good for the stomach and the digestive organs. Some persons, however, have been of opinion that it is unwholesome for females, bad for the eyesight, and productive of impotence in the male sex.

[22] Sibthorpe thinks that this is the Chondrilla ramosissima of Linnæus; but Fée identifies it with the Chondrilla juncea of Linnæus. The Lactuca perennis has also been suggested. See B. xxi. cc. 52 and 65.

[23] In the Isle of Lemnos, at the present day, a milky juice is extracted from the root of the Chondrilla juncea.

[24] To keep the hairs in their proper place.

CHAP. 46.—MUSHROOMS: PECULIARITIES OF THEIR GROWTH.

Among those vegetable productions which are eaten with risk, I shall, with good reason, include mushrooms;[25] a very dainty food, it is true, but deservedly held in disesteem since the notorious crime committed by Agrippina, who, through their agency, poisoned her husband, the Emperor Claudius, and at the same moment, in the person of his son Nero, inflicted another poisonous curse upon the whole world, herself[26] in particular.

Some of the poisonous mushrooms are easily known, being of a rank, unwholesome look, light red without and livid within, with the clefts[27] considerably enlarged, and a pale, sickly margin to the head.[28] These characteristics, however, are not presented by others of the poisonous kinds; but being dry to all appearance and strongly resembling the genuine ones, they present white spots upon the head, on the surface of the outer coat. The earth, in fact, first produces the uterus[28*] or receptacle for the mushroom, and then the mushroom within, like the yolk in the egg. Nor is this envelope less conducive to the nutrition of the young mushroom [than is the albumen of the egg to that of the chicken.] Bursting forth from the envelope at the moment of its first appearance, as it gradually increases it becomes transformed into a substantial stalk; it is but very rarely, too, that we find two growing from a single foot-stalk. The generative[29] principle of the mushroom is in the slime and the fermenting juices of the damp earth, or of the roots of most of the glandiferous trees. It appears at first in the shape of a sort of viscous foam, and then assumes a more substantial but membranous form, after which, as already stated, the young mushroom appears.

In general, these plants are of a pernicious nature, and the

[25] "Boleti." [26] She having been put to death by him.

[27] "Rimosa stria."

[28] This description would apply to many of the fungi known as toad-stools at the present day.

[28*] A true description, Fée says, of the agaric orouge, or the laseras mushroom.

[29] The true origin of fungi has not been discovered till a comparatively recent period, since the days of Linnæus even. It is now known that they are propagated by microscopic granules which are lodged in particular receptacles, or else by a dissolution and dispersion of their filamentous tissues.

use of them should be altogether rejected; for if by chance they should happen to grow near a hob-nail,[30] a piece of rusty iron, or a bit of rotten cloth, they will immediately imbibe all these foreign emanations and flavours, and transform them into poison. Who, in fact, is able to distinguish them, except those who dwell in the country, or the persons[31] that are in the habit of gathering them? There are other circumstances, too, which render them noxious; if they grow near the hole of a serpent,[32] for instance, or if they should happen to have been breathed upon by one when just beginning to open; being all the more disposed to imbibe the venom from their natural affinity to poisonous substances.

It will therefore be as well to be on our guard during the season at which the serpents have not as yet retired to their holes for the winter. The best sign to know this by is a multitude of herbs, of trees, and of shrubs, which remain green from the time that these reptiles leave their holes till their return; indeed, the ash alone will be quite sufficient for the purpose, the leaves of it never coming out after the serpents have made their appearance, or beginning to fall before they have retired to their holes. The entire existence of the mushroom, from its birth to its death, is never more than seven days.[33]

CHAP. 47. (23.)—FUNGI; SIGNS BY WHICH THE VENOMOUS KINDS MAY BE RECOGNIZED: NINE REMEDIES.

Fungi are of a more humid nature than the last, and are divided into numerous kinds, all of which are derived solely from the pituitous humours[34] of trees. The safest are those, the

[30] "Clavus caligaris." A nail of a caliga, or military boot. See B. vii. c. 44, and B. ix. c. 53.

[31] The peasants, Fée says, who are in the habit of gathering them, may probably be better trusted than the most learned authors that have written on the subject. He thinks it the best plan, however, to avoid all risks, by confining ourselves to the use of the common field mushroom, the morel, and one or two other well-known kinds.

[32] A prejudice entirely without foundation, Fée remarks.

[33] Fée says that from this it is evident that Pliny understands only the stalk mushrooms under the name of "boleti;" the fungi which adhere to trees living more years, many of them, than Pliny mentions days.

[34] "Ex pituita." Fée thinks that under the name of "boleti," Pliny means exclusively agaries or mushrooms of the division Amanites, which contains both the best and the most noxious kinds—the oronge for instance, and the false oronge.

flesh of which is red,[35] the colour being more pronounced than that of the mushroom. The next best are the white[36] ones, the stems of which have a head very similar to the apex[37] worn by the Flamens; and a third kind are the suilli,[38] very conveniently adapted for poisoning. Indeed, it is but very recently that they have carried off whole families, and all the guests at a banquet; Annæus Serenus,[39] for instance, the prefect of Nero's guard, together with all the tribunes and centurions. What great pleasure, then, can there be in partaking of a dish of so doubtful[40] a character as this? Some persons have classified these fungi according to the trees to which they are indebted for their formation, the fig, for instance, the fennel-giant, and the gummiferous trees; those belonging to the beech, the robur, and the cypress, not being edible, as already mentioned.[41] But who is there to give us a guarantee when they come to market, that these distinctions have been observed?

All the poisonous fungi are of a livid colour; and the degree of similarity borne by the sap of the tree itself to that of the fig will afford an additional indication whether they are venomous or not. We have already mentioned[42] various remedies for the poison of fungi, and shall have occasion to make mention of others; but in the mean time, it will be as well to observe that they themselves also have some medicinal[43] uses. Glaucias

[35] The Agaricus campestris of Linnæus, Fée thinks, our common field mushroom, or, possibly, the Agaricus deliciosus of Linnæus.

[36] The Agaricus procerus of Schœfer, probably, the tall columelle, Fée thinks.

[37] A cap worn by the Flamen; or chief-priest, of a somewhat conical shape; very similar in form to the Russian helmet of the present day.

[38] "Swine mushrooms." Fée suggests that this may be the Boletus edulis of Bulliard.

[39] A valued friend of the philosopher Seneca, as we learn from Tacitus, and Seneca's Epistles, Ep. 63.

[40] See Martial's Epigrams, B. i. Ep. 21.

[41] In B. xvi. c. 11. In that passage, however, the pine is mentioned, and not the beech.

[42] In B. xx. c. 13, *et passim*.

[43] Fée says that the fungi are but little used in modern medicine: the white bolet, he says, or larch bolet, is sometimes employed as a purgative, and some German writers have spoken in praise of the Boletus suaveolens of Bulliard, as a remedy for pulmonary phthisis. The agaric known as amadue, or German tinder, is also employed in surgery. Fée remarks that all that Pliny says as to the medicinal properties of mushrooms and fungi is more or less hazardous.

is of opinion that mushrooms are good for the stomach. The suilli are dried and strung upon a rush, as we see done with those brought from Bithynia. They are employed as a remedy for the fluxes known as "rheumatismi,"[44] and for excrescences of the fundament, which they diminish and gradually consume. They are used, also, for freckles and spots on women's faces. A wash, too, is made of them, as is done with lead,[45] for maladies of the eyes. Steeped in water, they are applied topically to foul ulcers, eruptions of the head, and bites inflicted by dogs.

I would here also give some general directions for the cooking of mushrooms, as this is the only article of food that the voluptuaries of the present day are in the habit of dressing with their own hands, and so feeding upon it in anticipation, being provided with amber-handled[46] knives and silver plates and dishes for the purpose. Those fungi may be looked upon as bad which become hard in cooking; while those, on the other hand, are comparatively innoxious, which admit of being thoroughly boiled, with the addition of some nitre. They will be all the safer if they are boiled with some meat or the stalks of pears: it is a very good plan, too, to eat pears directly after them. Vinegar, too, being of a nature diametrically opposed to them, neutralizes[47] their dangerous qualities.

CHAP. 48.—SILPHIUM: SEVEN REMEDIES.

All these productions owe their origin to rain,[48] and by rain is silphium produced. It originally came from Cyrenæ, as already[49] stated: at the present day, it is mostly imported from Syria, the produce of which country, though better than that of Media, is inferior to the Parthian kind. As already observed,[50] the silphium of Cyrenæ no longer exists. It is of considerable use in medicine, the leaves of it being employed to purge the uterus, and as an expellent of the dead fœtus; for which purposes a decoction of them is made in white

[44] Rheums, or catarrhs.

[45] See B. xxxiv. c. 50.

[46] "Sucinis novaculis." This may possibly mean "knives of amber;" and it is not improbable that the use of amber may have been thought a means of detecting the poisonous qualities of fungi.

[47] This, as Fée remarks, is the case. All kinds of fungi, too, it is said, may be eaten with impunity, if first boiled in salt water.

[48] In reality, rain only facilitates their developement.

[49] In B. xix. c. 15.

[50] In B. xix. c. 15.

aromatic wine, and taken in doses of one acetabulum, immediately after the bath. The root of it is good for irritations of the trachea, and is employed topically for extravasated blood; but, used as an aliment, it is difficult of digestion, being productive of flatulency and eructations: it is injurious, also, to the urinary secretions. Combined with wine and oil, it is extremely good for bruises, and, with wax, for the cure of scrofulous sores. Repeated fumigations with the root cause excrescences of the anus to subside.

CHAP. 49.—LASER: THIRTY-NINE REMEDIES.

Laser, a juice which distils from silphium, as we have already[51] stated, and reckoned among the most precious gifts presented to us by Nature, is made use of in numerous medicinal preparations. Employed by itself, it warms and revives persons benumbed with cold, and, taken in drink, it alleviates affections of the sinews. It is given to females in wine, and is used with soft wool as a pessary to promote the menstrual discharge. Mixed with wax, it extracts corns on the feet, after they have been first loosened with the knife: a piece of it, the size of a chick-pea, melted in water, acts as a diuretic. Andreas assures us that, taken in considerable doses even, it is never productive of flatulency, and that it greatly promotes the digestion, both in aged people and females; he says, too, that it is better used in winter than in summer, and that even then, it is best suited for those whose beverage is water: but due care must be taken that there is no internal ulceration. Taken with the food, it is very refreshing for patients just recovering from an illness; indeed, if it is used at the proper time, it has all the virtues of a desiccatory,[52] though it is more wholesome for persons who are in the habit of using it than for those who do not ordinarily employ it.

As to external maladies, the undoubted virtues of this medicament are universally acknowledged: taken in drink, it has

[51] In B. xix. c. 15. Asafœtida, Fée says, if it bears any relation to the laser of the ancients, had till very recently the reputation of being an emmenagogue, a hydragogue, a vermifuge, and a purgative. Applied topically, too, it is emollient, and is used for the cure of corns and tumours. Whatever Laser may have been, there is little doubt that much that is here stated by Pliny is either fabulous or erroneous.

[52] "Cauterium."

the effect, also, of neutralizing the venom of serpents and of poisoned weapons, and, applied with water, it is in general use for the cure of wounds. In combination with oil, it is only used as a liniment for the stings of scorpions, and with barley-meal or dried figs, for the cure of ulcers that have not come to a head. It is applied topically, also, to carbuncles, with rue or honey, or else by itself, with some viscous substance to make it adhere; for the bites of dogs, also, it is similarly employed. A decoction of it in vinegar, with pomegranate rind, is used for excrescences[53] of the fundament, and, mixed with nitre, for the corns commonly known as "morticini."[54] In cases of alopecy which have been first treated with nitre, it makes the hair grow again, applied with wine and saffron, or else pepper or mouse-dung and vinegar. For chilblains, fomentations are made of it with wine, or liniments with oil; as also for callosities and indurations. For corns on the feet, if pared first, it is particularly useful, as also as a preservative against the effects of bad water, and of unhealthy climates or weather. It is prescribed for cough, too, affections of the uvula, jaundice of long standing, dropsy, and hoarseness, having the effect of instantly clearing the throat and restoring the voice. Diluted in oxycrate, and applied with a sponge, it assuages the pains in gout.

It is given also in broth[55] to patients suffering from pleurisy, when about to take wine; and it is prescribed for convulsions and opisthotony, in pills about as large as a chick-pea, coated with wax. For quinsy, it is used as a gargle, and to patients troubled with asthma or inveterate cough, it is given with leeks in vinegar; it is prescribed, also, with vinegar, after drinking butter-milk.[56] It is recommended with wine for consumptive affections of the viscera and epilepsy, and with hydromel for paralysis of the tongue; with a decoction of honey, it forms a liniment for sciatica and lumbago.

For my own part, I should not recommend,[57] what some authors advise, to insert a pill of laser, covered with wax, in a hollow tooth, for tooth-ache; being warned to the contrary

[53] What Pliny here says of Laser, Dioscorides, B. iii. c. 94, says of the root of Silphium.

[54] "Dead" corns.

[55] Or pottage—"In sorbitione."

[56] Probably to prevent it turning sour on the stomach.

[57] Dioscorides, however, gives this advice, B. iii. c. 94.

by a remarkable case of a man, who, after doing so, threw himself headlong from the top of a house. Besides, it is a well-known fact, that if it is rubbed on the muzzle of a bull, it irritates him to an extraordinary degree; and that if it is mixed with wine, it will cause serpents to burst—those reptiles being extremely fond of wine. In addition to this, I should not advise any one to rub the gums with Attic honey, although that practice is recommended by some.

It would be an endless task to enumerate all the uses to which laser is put, in combination with other substances; and the more so, as it is only our object to treat of simple remedies, it being these in which Nature displays her resources. In the compound remedies, too, we often find our judgment deceived, and quite at fault, from our comparative inattention to the sympathy or antipathy which naturally exists between the ingredients employed—on this subject, however, we shall have to enlarge on a future occasion.[58]

50. (24.)—PROPOLIS: FIVE REMEDIES.

Honey would be held in no less esteem than laser, were it not for the fact that nearly every country produces it.[59] Laser is the production of Nature herself; but, for the formation of honey, she has created an insect, as already described.[60] The uses to which honey is put are quite innumerable, if we only consider the vast number of compositions in which it forms an ingredient. First of all, there is the propolis,[61] which we find in the hives, as already[62] mentioned. This substance has the property of extracting stings and all foreign bodies from the flesh, dispersing tumours, ripening indurations, allaying pains of the sinews, and cicatrizing ulcers of the most obstinate nature.

As to honey itself, it is of so peculiar a nature, that it prevents putrefaction[63] from supervening, by reason of its sweet-

[58] In c. 56 of this Book.

[59] It is this, in fact, combined with its utility, that ought to cause it to be so highly esteemed.

[60] In B. xi. c. 4, *et seq.*

[61] Bee-bread, or bee-glue.

[62] In B. xi. c. 6. It is a vegetable substance, Fée says, not elaborated by the bees. It is still employed in medicine, he says, for resolutive fumigations.

[63] The Babylonians employed it for the purpose of embalming.

ness solely, and not any inherent acridity, its natural properties being altogether different from those of salt. It is employed with the greatest success for affections[64] of the throat and tonsils, for quinsy and all ailments of the mouth, as also in fever, when the tongue is parched. Decoctions of it are used also for peripneumony and pleurisy, for wounds inflicted by serpents, and for the poison of fungi. For paralysis, it is prescribed in honied wine, though that liquor also has its own peculiar virtues. Honey is used with rose-oil, as an injection for the ears; it has the effect also of exterminating nits and foul vermin of the head. It is the best plan always to skim it before using it.

Still, however, honey has a tendency to inflate[65] the stomach; it increases the bilious secretions also, produces qualmishness, and, according to some, if employed by itself, is injurious[66] to the sight: though, on the other hand, there are persons who recommend ulcerations at the corners of the eyes to be touched with honey.

As to the elementary principles of honey, the different varieties of it, the countries where it is found, and its characteristic features, we have enlarged upon them on previous occasions: first,[67] when treating of the nature of bees, and secondly, when speaking[68] of that of flowers; the plan of this work compelling us to separate subjects which ought properly to be united, if we would arrive at a thorough knowledge of the operations of Nature.

CHAP. 51.—THE VARIOUS INFLUENCES OF DIFFERENT ALIMENTS UPON THE DISPOSITION.

While speaking of the uses of honey, we ought also to treat of the properties of hydromel.[69] There are two kinds of hydromel, one of which is prepared at the moment, and taken while fresh,[70] the other being kept to ripen. The first,

[64] It is of an emollient nature, and is preferred to sugar for sweetening liquids, in a multitude of instances.

[65] Fée denies this; but there is no doubt that honey has this tendency with some persons.

[66] Fée says that this is not the case.

[67] In B. xi. c. 13.

[68] In B. xxi. c. 44.

[69] "Aqua mulsa." See B. xiv. c. 20, where it is described as Hydromeli, or Melicraton.

[70] Fée says that this must have been a wholesome beverage, but that it

which is made of skimmed honey, is an extremely wholesome beverage for invalids who take nothing but a light diet, such as strained alica for instance: it reinvigorates the body, is soothing to the mouth and stomach, and by its refreshing properties allays feverish heats. I find it stated,[71] too, by some authors, that to relax the bowels it should be taken cold, and that it is particularly well-suited for persons of a chilly temperament, or of a weak and pusillanimous[72] constitution, such as the Greeks, for instance, call "micropsychi."

For there is a theory,[73] remarkable for its extreme ingenuity, first established by Plato, according to which the primary atoms of bodies, as they happen to be smooth or rough, angular or round, are more or less adapted to the various temperaments of individuals: and hence it is, that the same substances are not universally sweet or bitter to all. So, when affected with lassitude or thirst, we are more prone to anger than at other times.[74] These asperities, however, of the disposition, or rather I should say of the mind,[75] are capable of being modified by the sweeter beverages; as they tend to lubricate the passages for the respiration, and to mollify the channels, the work of inhalation and exhalation being thereby unimpeded by any rigidities. Every person must be sensible of this experimentally, in his own case: there is no one in whom anger, affliction, sadness, and all the emotions of the mind may not, in some degree, be modified by diet. It will therefore be worth our while to observe what aliments they are which exercise a physical effect, not only upon the body, but the disposition as well.

CHAP. 52.—HYDROMEL: EIGHTEEN REMEDIES.

Hydromel is recommended, too, as very good for a cough:

would cease to be so after undergoing fermentation. In the description of its uses there are some errors, Fée says, combined with some rational observations.

[71] See B. xviii. c. 29; also c. 61 of this Book.

[72] This seems to be the meaning of "præparci" here, though it generally signifies "niggardly," or "sordid."

[73] Fée combats this theory at considerable length; but there can be little doubt that the same substance has not the same taste to all individuals.

[74] Seneca makes a similar observation, De Irâ, B. iii. c. 10.

[75] "Animi seu potius animæ."

taken warm, it promotes vomiting. With the addition of oil it counteracts the poison of white lead;[76] of henbane, also, and of the halicacabum, as already stated,[77] if taken in milk, asses' milk in particular. It is used as an injection for diseases of the ears, and in cases of fistula of the generative organs. With crumb of bread it is applied as a poultice to the uterus, as also to tumours suddenly formed, sprains, and all affections which require soothing applications. The more recent writers have condemned the use of fermented hydromel, as being not so harmless as water, and less strengthening than wine. After it has been kept a considerable time, it becomes transformed into a wine,[78] which, it is universally agreed, is extremely prejudicial to the stomach, and injurious to the nerves.[79]

CHAP. 53.—HONIED WINE: SIX REMEDIES.

As to honied[80] wine, that is always the best which has been made with old wine: honey, too, incorporates with it very readily, which is never the case with sweet[81] wine. When made with astringent wine, it does not clog the stomach, nor has it that effect when the honey has been boiled: in this last case, too, it causes less flatulency, an inconvenience generally incidental to this beverage. It acts as a stimulant also upon a failing appetite; taken cold it relaxes the bowels, but used warm it acts astringently, in most cases, at least. It has a tendency also to make flesh. Many persons have attained an extreme old age, by taking bread soaked in honied wine, and no other diet—the famous instance of Pollio Romilius, for example. This man was more than one hundred years old when the late Emperor Augustus, who was then his host,[82] asked

[76] It is the oil, Fée says, and not the hydromel, that combats the effects of the white lead, a subcarbonate of lead.

[77] In B. xxi. c. 105.

[78] Mead, or metheglin.

[79] This is, perhaps, the meaning of "nervis" here, but it is very doubtful. See Note [9], in p. 77 of Vol. III.

[80] "Mulsum."

[81] "Dulci." Fée thinks, but erroneously, that by this word he means "must," or grape-juice, and combats the assertion. Honied wine, he says, is used at the present day (in France, of course,) as a popular cure for recent wounds and inveterate ulcers. As a beverage, it was very highly esteemed by the ancients. See B. vii. c. 54.

[82] "Hospes." It may possibly mean his "guest," but the other is more probable.

him by what means in particular he had retained such remarkable vigour of mind and body.—"Honied wine within, oil without,"[83] was his answer. According to Varro, the jaundice has the name of "royal disease"[84] given to it, because its cure is effected with honied wine.[85]

CHAP. 54.—MELITITES: THREE REMEDIES.

We have already described how melitites[86] is prepared, of must and honey, when speaking on the subject of wines. It is, I think, some ages, however, since this kind of beverage was made, so extremely productive as it was found to be of flatulency. It used, however, to be given in fever, to relieve inveterate costiveness of the bowels, as also for gout and affections of the sinews. It was prescribed also for females who were not in the habit of taking wine.

CHAP. 55.—WAX: EIGHT REMEDIES.

To an account of honey, that of wax is naturally appended, of the origin, qualities, and different kinds of which, we have previously made mention[87] on the appropriate occasions. Every kind of wax is emollient and warming, and tends to the formation of new flesh; fresh wax is, however, the best. It is given in broth to persons troubled with dysentery, and the combs themselves are sometimes used in a pottage made of parched alica. Wax counteracts the bad effects[88] of milk; and ten pills of wax, the size of a grain of millet, will prevent milk from coagulating in the stomach. For swellings in the groin, it is found beneficial to apply a plaster of white wax to the pubes.

[83] "Intus mulso, foris oleo." The people of Corsica were famous for being long-lived, which was attributed to their extensive use of honey.

[84] "Regius morbus."

[85] Honied wine being considered so noble a beverage, Celsus says, that "during its cure, the patient must be kept to his chamber, and the mind must be kept cheerful, with gaiety and pastimes, for which reason it is called the 'royal disease,'" B. iii. c. 24. In the text Pliny calls it "arquatorum morbus," the "disease of the bow-like," if we may be allowed the term. The origin of this term, according to Scribonius Largus, is the word "arcus," the rainbow, from a fancied resemblance of the colour of the skin, when affected with jaundice, to the green tints of the rainbow.

[86] In B. xiv. c. 11.

[87] In B. xi. c. 8, and B. xxi. c. 49.

[88] When it curdles on the stomach.

CHAP. 56.—REMARKS IN DISPARAGEMENT OF MEDICINAL COMPOSITIONS.

As to the different uses to which wax is applied, in combination with other substances in medicine, we could no more make an enumeration of them than we could of all the other ingredients which form part of our medicinal compositions. These preparations, as we have already[89] observed, are the results of human invention. Cerates, poultices,[89*] plasters, eye-salves, antidotes,—none of these have been formed by Nature, that parent and divine framer of the universe; they are merely the inventions of the laboratory, or rather, to say the truth, of human avarice.[90] The works of Nature are brought into existence complete and perfect in every respect, her ingredients being but few in number, selected as they are from a due appreciation of cause and effect, and not from mere guesswork; thus, for instance, if a dry substance is wanted to assume a liquefied form, a liquid, of course, must be employed as a vehicle, while liquids, on the other hand, must be united with a dry substance to render them consistent. But as for man, when he pretends, with balance in[91] hand, to unite and combine the various elementary substances, he employs himself not merely upon guesswork, but proves himself guilty of downright impudence.

It is not my intention to touch upon the medicaments afforded by the drugs of India, or Arabia and other foreign climates: I have no liking for drugs that come from so great a distance;[92] they are not produced for us, no, nor yet for the natives of those countries, or else they would not be so ready to sell them to us. Let people buy them if they please, as ingredients in perfumes, unguents, and other appliances of luxury; let them buy them as adjuncts to their superstitions even, if incense and costus we must have to propitiate the gods; but as to health, we can enjoy that blessing without

[89] In c. 49 of this Book.

[89*] "Malagmata."

[90] Fée, at some length, and with considerable justice, combats this assertion; though at the same time he remarks that Pliny is right in calling the attention of the medical world to the use of simple substances.

[91] "Scripulatim"—"By scruples."

[92] He forgets that many of them could only be produced by the agency of an Eastern sun.

their assistance, as we can easily prove—the greater reason then has luxury to blush at its excesses.

CHAP. 57.—REMEDIES DERIVED FROM GRAIN. SILIGO: ONE REMEDY. WHEAT: ONE REMEDY. CHAFF: TWO REMEDIES. SPELT: ONE REMEDY. BRAN: ONE REMEDY. OLYRA, OR ARINCA: TWO REMEDIES.

Having now described the remedies derived from flowers, both those which enter into the composition of garlands, and the ordinary garden ones, as well as from the vegetable productions, how could we possibly omit those which are derived from the cereals?

(25.) It will be only proper then, to make some mention of these as well. In the first place, however, let us remark that it is a fact universally acknowledged, that it is the most intelligent of the animated beings that derive their subsistence from grain. The grain of siligo[93] highly roasted and pounded in Aminean[94] wine, applied to the eyes, heals defluxions of those organs;[95] and the grain of wheat, parched on a plate of iron, is an instantaneous remedy for frost-bite in various parts of the body. Wheat-meal, boiled in vinegar, is good for contractions of the sinews, and bran,[96] mixed with rose-oil, dried figs, and myxa[97] plums boiled down together, forms an excellent gargle[98] for the tonsillary glands and throat.

Sextus Pomponius, who had a son prætor, and who was himself the first citizen of Nearer Spain, was on one occasion attacked with gout, while superintending the winnowing in his granaries; upon which, he immediately thrust his legs, to above the knees, in a heap of wheat. He found himself relieved, the swelling in the legs subsided in a most surprising degree, and from that time he always employed this remedy: indeed, the action of grain in masses is so extremely powerful as to cause the entire evaporation of the liquor in a cask. Men of experience in these matters recommend warm chaff of wheat or barley, as an application for hernia, and fomentations with

[93] See B. xviii. c. 20.

[94] See B. xiv. c. 5.

[95] Fée says that it can have no such effect.

[96] The bran of wheat, Fée says, is of a soothing nature, and that of barley slightly astringent.

[97] See B. xv. c. 12, and B. xvii. c. 14.

[98] The only truth in this statement, Fée says, is, that wheat bran makes a good gargle.

the water in which it has been boiled. In the grain known[99] as spelt, there is a small worm found, similar in appearance to the teredo:[1] if this is put with wax into the hollow of carious teeth, they will come out, it is said, or, indeed, if the teeth are only rubbed with it. Another name given to olyra, as already[1a] mentioned, is "arinca:" with a decoction of it a medicament is made, known in Egypt as "athera," and extremely good for infants. For adult persons it is employed in the form of a liniment.

CHAP. 58.—THE VARIOUS KINDS OF MEAL: TWENTY-EIGHT REMEDIES.

Barley[2]-meal, raw or boiled, disperses, softens, or ripens gatherings and inflammatory tumours; and for other purposes a decoction of it is made in hydromel, or with dried figs. If required for pains in the liver, it must be boiled with oxycrate in wine. When it is a matter of doubt whether an abscess should be made to suppurate or be dispersed, it is a better plan to boil the meal in vinegar, or lees of vinegar, or else with a decoction of quinces or pears. For the bite of the millepede,[3] it is employed with honey, and for the stings of serpents, and to prevent suppurations, with vinegar. To promote suppuration, it should be used with oxycrate, with the addition of Gallic resin. For gatherings, also, that have come to a head, and ulcers of long standing, it must be employed in combination with resin, and for indurations, with pigeons' dung, dried figs, or ashes. For inflammation of the tendons, or of the intestines and sides, or for pains in the male organs and denudations of the bones, it is used with poppies, or melilote; and for scrofulous sores, it is used with pitch and oil, mixed with the urine of a youth who has not reached the years of puberty. It is employed also with fenugreek for tumours of the thoracic organs, and in fevers, with honey, or stale grease.

For suppurations, however, wheat-meal is much more sooth-

[99] See B. xviii. c. 19.

[1] See B. xvi. c. 80. This insect, or weevil, Fée says, is the Calandra granaria. It strongly resembles the worm or maggot found in nuts. It can be of no efficacy whatever for the removal of carious teeth.

[1a] In B. xviii. c. 20.

[2] See B. xviii. c. 13.

[3] Or multipede. For these purposes, as Fée says, it is of no use whatever.

ing;[4] it is applied topically also for affections of the sinews, mixed with the juice of henbane, and for the cure of freckles, with vinegar and honey. The meal of zea,[5] from which, as already[6] stated, an alica is made, appears to be more efficacious than that of barley even; but that of the three month[7] kind is the most emollient. It is applied warm, in red wine, to the stings of scorpions, as also for affections of the trachea, and spitting of blood: for coughs, it is employed in combination with goat suet or butter.

The meal of fenugreek,[8] however, is the most soothing of them all: boiled with wine and nitre, it heals running ulcers, eruptions on the body, and diseases of the feet and mamillæ. The meal of æra[9] is more detergent than the other kinds, for inveterate ulcers and gangrenes: in combination with radishes, salt, and vinegar, it heals lichens, and with virgin sulphur, leprosy: for head-ache, it is applied to the forehead with goose-grease. Boiled in wine, with pigeons' dung and linseed, it ripens inflamed tumours and scrofulous sores.

CHAP. 59.—POLENTA: EIGHT REMEDIES.

Of the various kinds of polenta we have already treated sufficiently[10] at length, when speaking of the places where it is made. It differs from barley meal, in being parched, a process which renders it more wholesome for the stomach. It arrests looseness of the bowels, and heals inflammatory eruptions; and it is employed as a liniment for the eyes, and for head-ache, combined with mint or some other refreshing herb. It is used in a similar manner also for chilblains and wounds inflicted by serpents; and with wine, for burns. It has the effect also of checking pustular eruptions.

CHAP. 60.—FINE FLOUR: FIVE REMEDIES. PULS: ONE REMEDY. MEAL USED FOR PASTING PAPYRUS: ONE REMEDY.

The flour[11] of bolted meal, kneaded into a paste, has the

[4] It is no better, Fée says, than rye or barley-meal.
[5] See B. xviii. cc. 19, 29. [6] In B. xviii. c. 29.
[7] "Trimestris." See B. xviii. c. 12.
[8] Fée remarks, that this meal is still valued for its maturative properties. [9] Hair-grass, probably, or darnel. See B. xviii. c. 44.
[10] In B. xviii. c. 14. Injections of meal are still employed, Fée says, for diarrhœa.
[11] The flour of the grain called "far," Fée thinks. See B. xviii. c. 10.

property of drawing[12] out the humours of the body: hence it is applied to bruises gorged with blood, to extract the corrupt matter, even to soaking the bandages[13] employed: used with boiled must, it is still more efficacious. It is used as an application also for callosities of the feet and corns; boiled with old oil and pitch, and applied as hot as possible, it cures condylomata and all other maladies of the fundament in a most surprising manner. Puls[14] is a very feeding diet. The meal[15] used for pasting the sheets of papyrus is given warm to patients for spitting of blood, and is found to be an effectual cure.

CHAP. 61.—ALICA: SIX REMEDIES.

Alica is quite a Roman invention, and not a very ancient one: for otherwise[16] the Greeks would never have written in such high terms of the praises of ptisan in preference. I do not think that it was yet in use in the days of Pompeius Magnus, a circumstance which will explain why hardly any mention has been made of it in the works of the school of Asclepiades. That it is a most excellent preparation no one can have a doubt, whether it is used strained in hydromel, or whether it is boiled and taken in the form of broth or puls. To arrest flux of the bowels, it is first parched and then boiled with honeycomb, as already mentioned:[17] but it is more particularly useful when there is a tendency to phthisis after a long illness, the proper proportions being three cyathi of it to one sextarius of water. This mixture is boiled till all the water has gone off by evaporation, after which one sextarius of sheep' or goats' milk is added: it is then taken by the patient daily, and after a time some honey is added. By this kind of nutriment a deep decline may be cured.

[12] This statement is probably founded upon the notion that corn has the property of attracting liquids, even when enclosed in vessels.

[13] A paste of this kind, if applied to a recent wound, would have the effect of preventing cicatrization, and giving free access to the flow of blood.

[14] See B. xviii. c. 19.

[15] Or "flour." See B. xiii. c. 26.

[16] Fée remarks, that the Greeks *were* acquainted with alica, to which they gave the name of χόνδρος; indeed, Galen expressly states that it was well known in the days of Hippocrates, who says that it is more nourishing than ptisan. Festus says that alica is so called, "quod alit," because it nourishes the body.—See B. xviii. c. 29.

[17] In c. 55 of this Book.

CHAP. 62.—MILLET: SIX REMEDIES.

Millet[18] arrests looseness of the bowels and dispels gripings of the stomach, for which purposes it is first parched. For pains in the sinews, and of various other descriptions, it is applied hot, in a bag, to the part affected. Indeed, there is no better topical application known, as it is extremely light and emollient, and retains heat for a very long time: hence it is that it is so much employed in all those cases in which the application of heat is necessary. The meal of it, mixed with tar, is applied to wounds inflicted by serpents and millepedes.

CHAP. 63.—PANIC: FOUR REMEDIES.

Diocles, the physician, has given to panic[19] the name of "honey of corn."[20] It has the same properties as millet, and, taken in wine, it is good for dysentery. In a similar manner, too, it is applied to such parts of the body as require to be treated with heat. Boiled in goats'-milk, and taken twice a-day, it arrests looseness of the bowels; and, used in a similar manner, it is very good for gripings of the stomach.

CHAP. 64.—SESAME: SEVEN REMEDIES. SESAMOIDES: THREE REMEDIES. ANTICYRICUM: THREE REMEDIES.

Sesame,[21] pounded and taken in wine, arrests vomiting: it is applied also topically to inflammations of the ears, and burns. It has a similar effect even while in the blade; and in that state, a decoction of it in wine is used as a liniment for the eyes. As an aliment it is injurious to the stomach, and imparts a bad odour to the breath. It is an antidote to the bite of the spotted lizard, and heals the cancerous sore known as "cacoethes."[22] The oil made from it, as already[23] mentioned, is good for the ears.

Sesamoïdes[24] owes its name to its resemblance to sesame;

[18] See B. xviii. c. 24.

[19] See B. xviii. c. 25.

[20] "Mel frugum."

[21] See B. xviii. c. 22. It is still used in medicine in Egypt, and as a cosmetic.

[22] Or "bad habit."

[23] In B. xv. c. 7. See also B. xxiii. c. 49. Fée thinks it not unlikely that oil of sesame might have this effect. The people of Egypt still look upon this grain as an antophthalmic, but, as Fée says, without any good reason.

[24] "Like sesame."

the grain[25] of it, however, is bitter, and the leaf more diminutive: it is found growing in sandy soils. Taken in water, it carries off bile, and, with the seed, a liniment is made for erysipelas: it disperses inflamed swellings also. Besides this, there is another[26] sesamoïdes, which grows at Anticyra, and, for that reason, is known by some as "anticyricon." In other respects, it is similar to the plant erigeron, of which we shall have to speak[27] on a future occasion; but the seed of it is like that of sesame. It is given in sweet wine as an evacuant, in doses of a pinch in three fingers, mixed with an obolus and a half of white hellebore; this preparation being employed principally as a purgative, in cases of insanity, melancholy, epilepsy, and gout. Taken alone, in doses of one drachma, it purges by stool.

CHAP. 65.—BARLEY: NINE REMEDIES. MOUSE-BARLEY, BY THE GREEKS CALLED PHŒNICE: ONE REMEDY.

The whitest barley is the best. Boiled[28] in rain-water, the pulp of it is divided into lozenges, which are used in injections for ulcerations of the intestines and the uterus. The ashes of barley are applied to burns, to bones denuded of the flesh, to purulent eruptions, and to the bite of the shrew-mouse: sprinkled with salt and honey they impart whiteness to the teeth, and sweetness to the breath. It is alleged that persons who are in the habit of eating barley-bread are never troubled with gout in the feet: they say, too, that if a person takes nine grains of barley, and traces three times round a boil, with each of them in the left hand, and then throws them all into the fire, he will experience an immediate cure. There is another plant, too, known as "phœnice" by the

[25] Sprengel has identified this plant, the "smaller" Sesamoides of Dioscorides, with the Astragalus sesameus of Linnæus, or else with the Reseda canescens. Other naturalists have mentioned the Catananche cærulea of Linnæus, the Passerina hirsuta of Linnæus, and the Passerina polygalæofolia of Lapeyrouse. Fée is of opinion that it has not been identified.

[26] Altogether a different plant; Sprengel identifies it with the Reseda Mediterranea, but Fée dissents from that opinion, and is inclined to agree with the opinion of Dalechamps, that it is the Daphne Tartonraira of Linnæus, which is a strong purgative.

[27] In B. xxv. c. 106.

[28] Fée remarks that this Chapter includes a number of gross prejudices which it is not worth while to examine or contradict.

Greeks, and as "mouse-barley"[29] by us: pounded and taken in wine, it acts remarkably well as an emmenagogue.

CHAP. 66.—PTISAN: FOUR REMEDIES.

To ptisan,[30] which is a preparation of barley, Hippocrates[31] has devoted a whole treatise; praises, however, which at the present day are all transferred to "alica," being, as it is, a much more wholesome preparation. Hippocrates, however, recommends it as a pottage, for the comparative ease with which, from its lubricous nature, it is swallowed; as also, because it allays thirst, never swells in the stomach, passes easily through the intestines, and is the only food that admits of being given twice a-day in fever, at least to patients who are in the habit of taking two meals—so opposed is his method to that of those physicians who are for famishing their patients. He forbids it to be given, however, without being first strained; for no part, he says, of the ptisan, except the water,[32] should be used. He says, too, that it must never be taken while the feet are cold, and, indeed, that no drink of any kind should be taken then. With wheat a more viscous kind of ptisan is made, which is found to be still more efficacious for ulcerations of the trachea.

CHAP. 67.—AMYLUM: EIGHT REMEDIES. OATS: ONE REMEDY.

Amylum[33] weakens the eyesight,[34] and is bad for the throat, whatever opinions may be held to the contrary. It has the effect also of arresting looseness of the bowels, and curing defluxions and ulcerations of the eyes, as also pustules and congestions of the blood. It mollifies indurations of the eyelids, and is given with egg to persons when they vomit blood. For pains of the bladder, half an ounce of it is prescribed with an egg, and as much raisin wine as three egg-shells will hold, the mixture to be made lukewarm and taken immediately after the bath. Oatmeal, boiled in vinegar, removes moles.

[29] "Hordeum murinum." Anguillara, Matthioli, and Sprengel identify it with the Lolium perenne of Linnæus; but, as Fée says, it is clear that Pliny had in view the modern Hordeum murinum, mouse-barley.

[30] See B. xviii. c. 15.

[31] At the present day, as Fée says, oatmeal is preferred to barley-meal.

[32] Being our "barley-water," in fact.

[33] Our "starch" probably. See B. xviii. c. 17.

[34] A prejudice, Fée says, which is totally without foundation.

CHAP. 68.—BREAD: TWENTY-ONE REMEDIES.

Bread,[35] too, which forms our ordinary nutriment, possesses medicinal properties, almost without number. Applied with water and oil, or else rose-oil, it softens abscesses; and, with hydromel, it is remarkably soothing for indurations. It is prescribed with wine to produce delitescence, or when a defluxion requires to be checked; or, if additional activity is required, with vinegar. It is employed also for the morbid defluxions of rheum, known to the Greeks as "rheumatismi," and for bruises and sprains. For all these purposes, however, bread made with leaven, and known as "autopyrus,"[36] is the best.

It is applied also to whitlows, in vinegar, and to callosities of the feet. Stale bread, or sailors'-bread,[37] beaten up and baked again, arrests looseness of the bowels. For persons who wish to improve the voice, dry bread is very good, taken fasting; it is useful also as a preservative against catarrhs. The bread called "sitanius," and which is made of three-month[38] wheat, applied with honey, is a very efficient cure for contusions of the face and scaly eruptions. White bread, steeped in hot or cold water, furnishes a very light and wholesome aliment for patients. Soaked in wine, it is applied as a poultice for swellings of the eyes, and used in a similar manner, or with the addition of dried myrtle, it is good for pustules on the head. Persons troubled with palsy are recommended to take bread soaked in water, fasting, immediately after the bath. Burnt bread modifies the close smell of bedrooms, and, used in the strainers,[39] it neutralizes bad odours in wine.

CHAP. 69.—BEANS: SIXTEEN REMEDIES.

Beans,[40] too, furnish us with some remedies. Parched whole, and thrown hot into strong vinegar, they are a cure for grip-

[35] Bread, as made at the present day, is but little used in modern medicine, beyond being the basis of many kinds of poultices. A decoction of bread with laudanum, is known in medicine, Fée says, as the "white decoction."

[36] "Unseparated from the bran."

[37] Probably like the military bread, made of the coarsest meal, and unfermented.

[38] See B. xviii. c. 12.

[39] "Saccos." See B. xiv. c. 28.

[40] See B. xviii. c. 30. Bean meal is but little used in modern medicine, but most that Pliny here says is probably well founded; with the exception, however, of his statement as to its employment for diseases of the chest.

ings of the bowels. Bruised, and boiled with garlic, they are taken with the daily food for inveterate coughs, and for suppurations of the chest. Chewed by a person fasting, they are applied topically to ripen boils, or to disperse them; and, boiled in wine, they are employed for swellings of the testes and diseases of the genitals. Bean-meal, boiled in vinegar, ripens tumours and breaks them, and heals contusions and burns. M. Varro assures us that beans are very good for the voice. The ashes of bean stalks and shells, with stale hogs'-lard, are good for sciatica and inveterate pains of the sinews. The husks, too, boiled down, by themselves, to one-third, arrest looseness of the bowels.

CHAP. 70.—LENTILS: SEVENTEEN REMEDIES.

Those lentils[41] are the best which boil the most easily, and those in particular which absorb the most water. They injure the eye-sight,[42] no doubt, and inflate the stomach; but taken with the food, they act astringently upon the bowels, more particularly if they are thoroughly boiled in rain-water: if, on the other hand, they are lightly boiled, they are laxative.[43] They break purulent ulcers, and they cleanse and cicatrize ulcerations of the mouth. Applied topically, they allay all kinds of abscesses, when ulcerated and chapped more particularly; with melilote or quinces they are applied to defluxions of the eyes, and with polenta they are employed topically for suppurations. A decoction of them is used for ulcerations of the mouth and genitals, and, with rose-oil or quinces, for diseases of the fundament. For affections which demand a more active remedy, they are used with pomegranate rind, and the addition of a little honey; to prevent the composition from drying too quickly, beet leaves are added. They are applied topically, also, to scrofulous sores, and to tumours, whether ripe or only coming to a head, being thoroughly boiled first in vinegar. Mixed with hydromel they are employed for the cure of chaps, and with pomegranate rind for gangrenes. With polenta they are used for gout, for diseases of the uterus and kidneys, for chilblains, and for ulcerations which

[41] Most of the properties here ascribed to the lentil, Fée says, are quite illusory.

[42] This, Fée remarks, is not the fact.

[43] This statement, Fée thinks, is probably conformable with truth.

cicatrize with difficulty. For a disordered stomach, thirty grains should be eaten.

For cholera,[44] however, and dysentery, it is the best plan to boil the lentils in three waters, in which case they should always be parched first, and then pounded as fine as possible, either by themselves, or else with quinces, pears, myrtle, wild endive, black beet, or plantago. Lentils are bad for the lungs, head-ache, all nervous affections, and bile, and are very apt to cause restlessness at night. They are useful, however, for pustules, erysipelas, and affections of the mamillæ, boiled in sea-water; and, applied with vinegar, they disperse indurations and scrofulous sores. As a stomachic, they are mixed, like polenta, with the drink given to patients. Parboiled in water, and then pounded and bolted through a sieve to disengage the bran, they are good for burns, care being taken to add a little honey as they heal: they are boiled, also, with oxycrate for diseases of the throat.[45]

There is a marsh-lentil[46] also, which grows spontaneously in stagnant waters. It is of a cooling nature, for which reason it is employed topically for abscesses, and for gout in particular, either by itself or with polenta. Its glutinous properties render it a good medicine for intestinal hernia.

CHAP. 71.—THE ELELISPHACOS, SPHACOS, OR SALVIA: THIRTEEN REMEDIES.

The plant called by the Greeks "elelisphacos,"[47] or "sphacos," is a species of wild lentil, lighter than the cultivated one, and with a leaf, smaller, drier, and more odoriferous. There is also another[48] kind of it, of a wilder nature, and possessed

[44] Fée remarks, that we must not confound the cholera of the ancients with the Indian cholera, our cholera morbus. Celsus describes the cholera with great exactness, B. iv. c. 11.

[45] They would be of no benefit, Fée thinks, in such a case.

[46] It bears no relation whatever to the lentil, not being a leguminous plant. Fée would include under this head the Lemna minor, the Lemna gibba, and the Lemna polyrrhiza of modern botany, all being found together in the same stagnant water.

[47] Fée remarks, that Pliny is clearly speaking of two essentially different plants under this name; the first, he thinks, may very probably be the Ervum tetraspermum of Linnæus.

[48] This, Fée thinks, is the Salvia officinalis of Linnæus, our common sage, which has no affinity whatever with the lentil.

of a powerful smell, the other one being milder. It[49] has leaves the shape of a quince, but white and smaller: they are generally boiled with the branches. This plant acts as an emmenagogue and a diuretic: and it affords a remedy for wounds inflicted by the sting-ray,[50] having the property of benumbing the part affected. It is taken in drink with wormwood for dysentery: employed with wine it accelerates the catamenia when retarded, a decoction of it having the effect of arresting them when in excess: the plant, applied by itself, stanches the blood of wounds. It is a cure, too, for the stings of serpents, and a decoction of it in wine allays prurigo of the testes.

Our herbalists of the present day take for the "elelisphacos" of the Greeks the "salvia"[51] of the Latins, a plant similar in appearance to mint, white and aromatic. Applied externally, it expels the dead fœtus, as also worms which breed in ulcers and in the ears.

CHAP. 72.—THE CHICKPEA AND THE CHICHELING VETCH: TWENTY-THREE REMEDIES.

There is a wild chickpea also, which resembles in its leaf the cultivated kind,[52] and has a powerful smell. Taken in considerable quantities, it relaxes the bowels, and produces griping pains and flatulency; parched, however, it is looked upon as more wholesome. The chicheling vetch,[53] again, acts more beneficially upon the bowels. The meal of both kinds heals running sores of the head—that of the wild sort being the more efficacious of the two—as also epilepsy, swellings of the liver, and stings inflicted by serpents. It acts as an emmenagogue and a diuretic, used in the grain more particularly, and it is a cure for lichens, inflammations of the testes, jaundice, and dropsy. All these kinds, however, exercise an injurious effect upon ulcerations of the bladder and kidneys: but in combination with honey they are very good for gangrenous sores, and the cancer known as "cacoethes." The following is a method

[49] Sprengel thinks that he is speaking here of the Salvia triloba of Linnæus.

[50] The Trygon pastinaca of Linnæus.

[51] "Sage," the plant, no doubt, that he has been describing.

[52] See B. xviii. c. 32. Fée thinks that the wild cicer is identical with our cultivated one, the Cicer rietinum.

[53] See B. xviii. cc. 26 and 32.

adopted for the cure of all kinds of warts: on the first day of the moon, each wart must be touched with a single chickpea, after which, the party must tie up the pease in a linen cloth, and throw it behind him; by adopting this plan, it is thought, the warts will be made to disappear.

Our authors recommend the plant known as the "arietinum"[54] to be boiled in water with salt, and two cyathi of the decoction to be taken for strangury. Employed in a similar manner, it expels calculi, and cures jaundice. The water in which the leaves and stalks of this plant have been boiled, applied as a fomentation as hot as possible, allays gout in the feet, an effect equally produced by the plant itself, beaten up and applied warm. A decoction of the columbine[55] chickpea, it is thought, moderates the shivering fits in tertian or quartan fevers; and the black kind, beaten up with half a nut-gall, and applied with raisin wine, is a cure for ulcers of the eyes.

CHAP. 73.—THE FITCH: TWENTY REMEDIES.

In speaking of the fitch,[56] we have mentioned certain properties belonging to it; and, indeed, the ancients have attributed to it no fewer virtues than they have to the cabbage. For the stings of serpents, it is employed with vinegar; as also for bites inflicted by crocodiles and human beings. If a person eats of it, fasting, every day, according to authors of the very highest authority, the spleen will gradually diminish. The meal of it removes spots on the face and other parts of the body. It prevents ulcers from spreading also, and is extremely efficacious for affections of the mamillæ: mixed with wine, it makes carbuncles break. Parched, and taken with a piece of honey the size of a hazel nut, it cures dysuria, flatulency, affections of the liver, tenesmus, and that state of the body in which no nourishment is derived from the food, generally known as "atrophy." For cutaneous eruptions, plasters are made of it boiled with honey, being left to remain four days on the part affected. Applied with honey, it prevents inflamed tumours from suppurating. A decoction of it, employed as a fomenta-

[54] Or "ram's head" cicer; from its fancied resemblance to it: the name is still given to the cultivated plant.

[55] Or "pigeon" cicer. See B. xviii. c. 32. Fée thinks it probable that this plant may be a variety of the Ervum.

[56] In B. xviii. c. 38. The Ervum ervilia of Linnæus; it is no longer employed in medicine.

tion, cures chilblains and prurigo; and it is thought by some, that if it is taken daily, fasting, it will improve the complexion of all parts of the body.

Used as an aliment, this pulse is far from wholesome,[57] being apt to produce vomiting, disorder the bowels, and stuff the head and stomach. It weakens the knees also; but the effects of it may be modified by keeping it in soak for several days, in which case it is remarkably beneficial for oxen and beasts of burden. The pods of it, beaten up green with the stalks and leaves, before they harden, stain the hair black.

CHAP. 74.—LUPINES: THIRTY-FIVE REMEDIES.

There are wild lupines,[58] also, inferior in every respect to the cultivated kinds, except in their bitterness. Of all the alimentary substances, there are none which are less heavy or more useful[59] than dried lupines. Their bitterness is considerably modified by cooking them on hot ashes, or steeping them in hot water. Employed frequently as an article of food, they impart freshness to the colour; the bitter lupine, too, is good for the sting of the asp. Dried lupines, stripped of the husk and pounded, are applied in a linen cloth to black ulcers, in which they make new flesh: boiled in vinegar, they disperse scrofulous sores and imposthumes of the parotid glands. A decoction of them, with rue and pepper, is given in fever even, as an expellent of intestinal worms,[60] to patients under thirty years of age. For children, also, they are applied to the stomach as a vermifuge, the patient fasting in the meantime; and, according to another mode of treatment, they are parched and taken in boiled must or in honey.

Lupines have the effect of stimulating the appetite, and of dispelling nausea. The meal of them, kneaded up with vinegar, and applied in the bath, removes pimples and prurigo; employed alone, it dries up ulcerous sores. It cures bruises also, and, used with polenta, allays inflammations. The wild lupine is found to be the most efficacious for debility of the

[57] Fée says that this is the case, and that the use of it is said to produce a marked debility.

[58] See B. xviii. c. 10.

[59] Fée remarks that it is surprising to find the ancients setting so much value on the lupine, a plant that is bitter and almost nauseous, difficult to boil, and bad of digestion.

[60] It must be the rue, Fée says, that acts as the vermifuge.

hips and loins. A decoction of them, used as a fomentation, removes freckles and improves the skin; and lupines, either wild or cultivated, boiled down to the consistency of honey, are a cure for black eruptions and leprosy. An application of cultivated lupines causes carbuncles to break, and reduces inflamed tumours and scrofulous sores, or else brings them to a head: boiled in vinegar, they restore the flesh when cicatrized to its proper colour. Thoroughly boiled in rain-water, the decoction of them furnishes a detersive medicine, of which fomentations are made for gangrenes, purulent eruptions, and running ulcers. This decoction is very good, taken in drink, for affections of the spleen, and with honey, for retardations of the catamenia. Beaten up raw, with dried figs, lupines are applied externally to the spleen. A decoction of the root acts as a diuretic.

The herb chamæleon,[61] also, is boiled with lupines, and the water of it strained off, to be used as a potion for cattle. Lupines boiled in amurca,[62] or a decoction of them mixed with amurca, heals the itch in beasts. The smoke of lupines kills[63] gnats.

CHAP. 75.—IRIO, OR ERYSIMUM, BY THE GAULS CALLED VELA: FIFTEEN REMEDIES.

When treating of the cereals, we have already stated[64] that the irio, which strongly resembles sesame, is also called "erysimon" by the Greeks: the Gauls give it the name of "vela." It is a branchy plant, with leaves like those of rocket, but a little narrower, and a seed similar to that of nasturtium. With honey, it is extremely good for cough and purulent expectorations: it is given, also, for jaundice and affections of the loins, pleurisy, gripings of the bowels, and cœliac affections, and is used in liniments for imposthumes of the parotid glands and carcinomatous affections. Employed with water, or with honey, it is useful for inflammations of the testes, and is extremely beneficial for the diseases of infants. Mixed with honey and figs, it is good for affections of the fundament and diseases of

[61] See c. 24 of this Book.

[62] Lees of olive oil.

[63] This is not the fact.

[64] In B. xviii. c. 22. Racine, in his letters to Boileau, speaks of a chorister of Notre Dame, who recovered his voice by the aid of this plant.

the joints; and taken in drink, it is an excellent antidote to poisons. It is used, also, for asthma,[65] and with stale axle-grease for fistulas; but it must not be allowed to touch the interior of them.

CHAP. 76.—HORMINUM: SIX REMEDIES.

Horminum resembles cummin, as already stated,[66] in its seed; but in other respects, it is like the leek.[67] It grows to some nine inches in height, and there are two varieties of it. In one of these the seed is oblong, and darker than that of the other, and the plant itself is in request as an aphrodisiac, and for the cure of argema and albugo in the eyes: of the other kind the seed is whiter, and of a rounder form. Both kinds, pounded and applied with water, are used for the extraction of thorns from the body. The leaves, steeped in vinegar, disperse tumours, either used by themselves, or in combination with honey; they are employed, also, to disperse boils, before they have come to a head, and other collections of acrid humours.

CHAP. 77.—DARNEL: FIVE REMEDIES.

Even more than this—the very plants which are the bane of the corn-field are not without their medicinal uses. Darnel[68] has received from Virgil[69] the epithet of "unhappy;" and yet, ground and boiled with vinegar, it is used as an application for the cure of impetigo, which is the more speedily effected the oftener the application is renewed. It is employed, also, with oxymel, for the cure of gout and other painful diseases. The following is the mode of treatment: for one sextarius of vinegar, two ounces of honey is the right proportion; three sextarii having been thus prepared, two sextarii of darnel meal are boiled down in it to a proper consistency, the mixture being applied warm to the part affected. This meal, too, is used for the extraction of splinters of broken bones.

[65] It is still used, Fée says, for coughs.

[66] In B. xviii. c. 22.

[67] Dioscorides says, horehound. The Horminum, apparently, has not been identified.

[68] See B. xviii. c. 44. Darnel acts upon the brain to such an extent as to produce symptoms like those of drunkenness; to which property it is indebted for its French name of *ivraie*. It is no longer used in medicine.

[69] Georg. i. 153; "Infelix lolium, et steriles dominantur avenæ."

CHAP. 78.—THE PLANT MILIARIA: ONE REMEDY.

"Miliaria"[70] is the name given to a plant which kills millet: this plant, it is said, is a cure for gout in beasts of burden, beaten up and administered in wine, with the aid of a horn.

CHAP. 79.—BROMOS: ONE REMEDY.

Bromos[71] is the seed also of a plant which bears an ear. It is a kind of oat which grows among corn, to which it is injurious; the leaves and stalk of it resemble those of wheat, and at the extremity it bears seeds, hanging down, something like small locusts[72] in appearance. The seed of this plant is useful for plasters, like barley and other grain of a similar nature. A decoction of it is good for coughs.

CHAP. 80.—OROBANCHE, OR CYNOMORION: ONE REMEDY.

We have mentioned[73] orobanche as the name of a plant which kills the fitch and other leguminous plants. Some persons have called it "cynomorion," from the resemblance which it bears to the genitals of a dog. The stem of it is leafless, thick, and red. It is eaten either raw, or boiled in the saucepan, while young and tender.

CHAP. 81.—REMEDIES FOR INJURIES INFLICTED BY INSECTS WHICH BREED AMONG LEGUMINOUS PLANTS.

There are some venomous insects also, of the solipuga[74] kind, which breed upon leguminous plants, and which, by stinging the hands, endanger life. For these stings all those remedies are efficacious which have been mentioned for the bite of the spider and the phalangium.[75] Such, then, are the medicinal properties for which the cereals are employed.

[70] Fée identifies this plant with the Cuscuta Europæa of Linnæus. Sprengel takes it to be the Panicum verticillatum of Linnæus.

[71] The Avena sativa of Linnæus; the cultivated oat, and not the Greek oat of B. xviii. c. 42.

[72] The term "locusta" has been borrowed by botanists to characterize the fructification of gramineous plants.

[73] In B. xviii. c. 44. The present, Fée thinks, is a different plant from the Cuscuta Europæa, and he identifies it with the Orobanche caryophyllacea of Smith, or else the Orobanche ramosa of Linnæus. The Orobanche is so called from its choking (ἄγχει) the orobus or ervum. It is also found to be injurious to beans, trefoil, and hemp. In Italy, the stalks are eaten as a substitute for asparagus.

[74] See B. viii. c. 43.

[75] See B. x. c. 95, and B. xi. cc. 24, 28.

CHAP. 82.—THE USE MADE OF THE YEAST OF ZYTHUM.

Different beverages, too, are made from the cereals, zythum in Egypt, cælia and cerea in Spain, cervesia[76] and numerous liquors in Gaul and other provinces. The yeast[77] of all of these is used by women as a cosmetic for the face.—But as we are now speaking of beverages, it will be the best plan to pass on to the various uses of wine, and to make a beginning with the vine of our account of the medicinal properties of the trees.

SUMMARY.—Remedies, narratives, and observations, nine hundred and six.

AUTHORS QUOTED.—All those mentioned in the preceding Book; and, in addition to them, Chrysermus,[78] Eratosthenes,[79] and Alcæus.[80]

[76] As to the beers of the ancients, see B. xiv. c. 29. Very few particulars are known of them; but we learn from the Talmud, where it is called *zeitham*, that zythum was an Egyptian beverage made of barley, wild saffron, and salt, in equal parts. In the Mishna, the Jews are enjoined not to use it during the Passover.

[77] "Spuma;" literally, "foam."

[78] A physician who lived, probably, at the end of the second or the beginning of the first century B.C., as he was one of the tutors of Heraclides of Erythræ. His definition of the pulse has been preserved by Galen, De Differ. Puls. B. iv. c. 10, and an anecdote of him is mentioned by Sextus Empiricus.

[79] See end of B. ii.

[80] A native of Mytilene, in the island of Lesbos, the earliest of the Æolian lyric poets. He flourished at the latter end of the seventh century B.C. Of his Odes only a few fragments, with some Epigrams, have come down to us.

BOOK XXIII.

THE REMEDIES DERIVED FROM THE CULTIVATED TREES.

CHAP. 1. (1.)—INTRODUCTION.

We have now set forth the various properties, medicinal or otherwise, as well of the cereals as of the other productions which lie upon[1] the surface of the earth, for the purpose either of serving us for food, or for the gratification of our senses with their flowers or perfumes. In the trees, however, Pomona has entered the lists with them, and has imparted certain medicinal properties to the fruits as they hang. Not content with protecting and nourishing, under the shadow of the trees, the various plants which we have[2] already described, she would even appear to be indignant, as it were, at the thought that we should derive more succour from those productions which are further removed from the canopy of heaven, and which have only come into use in times comparatively recent. For she bids man bear in mind that it was the fruits of the trees which formed his first nourishment, and that it was these which first led him to look upwards towards the heavens: and not only this, but she reminds him, too, that even still it is quite possible for him to derive his aliment from the trees, without being indebted to grain for his subsistence.

CHAP. 2.—THE VINE.

But, by Hercules! it is the vine more particularly to which she has accorded these medicinal properties, as though she were not contented with her generosity in providing it with such delicious flavours, and perfumes, and essences, in its omphacium, its œnanthe, and its massaris, preparations upon which we have already[3] enlarged. "It is to me," she says, "that man is indebted for the greater part of his enjoyments,

[1] In contradistinction to the fruits which hang from trees.

[2] See B. xvii. c. 18.

[3] In B. xii. cc. 60 and 61.

it is I that produce for him the flowing wine and the trickling oil, it is I that ripen the date and other fruits in numbers so varied; and all this, not insisting, like the earth, on their purchase at the cost of fatigues and labours. No necessity do I create for ploughing with the aid of oxen, for beating out upon the threshing-floor, or for bruising under the millstone, and all in order that man may earn his food at some indefinite time by this vast expenditure of toil. As for me, all my gifts are presented to him ready prepared: for no anxieties or fatigues do they call, but, on the contrary, they offer themselves spontaneously, and even fall to the ground, if man should be too indolent to reach them as they hang." Vying even with herself, Pomona has done still more for our practical advantage than for the mere gratification of our pleasures and caprices.

CHAP. 3.—THE LEAVES AND SHOOTS OF THE VINE: SEVEN REMEDIES.

[4]The leaves and shoots of the vine, employed with polenta, allay head-ache and reduce inflammations:[5] the leaves, too, applied by themselves with cold water, are good for burning pains in the stomach; and, used with barley-meal, are excellent applications for diseases of the joints. The shoots, beaten up and applied, have the property of drying up all kinds of running tumours, and the juice extracted from them is used as an injection for the cure of dysentery. The tears of the vine, which would appear to be a sort of gum, will heal leprous sores, lichens, and itch-scabs, if treated first with nitre: used with oil, and applied frequently to superfluous hairs, they act as a depilatory, those more particularly which exude from the vine when burnt in a green state: this last liquid has the effect, too, of removing warts. An infusion of the shoots in water, taken in drink, is good for persons troubled with spitting of blood, and for the fainting fits which sometimes ensue upon conception.

[4] All this passage is found in Dioscorides, B. v. c. 1, who probably borrowed it from the same sources as our author.

[5] Fée remarks, that all the statements here made as to the medicinal properties of the vine are entirely unfounded, except that with reference to the bark of the vine: as it contains a small quantity of tannin, it might possibly, in certain cases, arrest hæmorrhage.

The bark of the vine and the dried leaves arrest the flowing of blood from wounds, and make the sores cicatrize more rapidly. The juice of the white vine,[6] extracted from it while green, effectually removes cutaneous[7] eruptions. The ashes[8] of the cuttings of vines, and of the husks of the grapes, applied with vinegar, are curative of condylomata and diseases of the fundament; as also of sprains, burns, and swellings of the spleen, applied with rose-oil, rue, and vinegar. Used with wine, but without oil, they make a fomentation for erysipelas and parts of the body which are chafed; they act as a depilatory also.[9] For affections of the spleen the ashes of vine-cuttings, moistened with vinegar, are administered in drink, being taken in doses of two cyathi in warm water; after which the patient must take due care to lie upon the side in which the spleen is situate.

The tendrils, too, which the vine throws out as it climbs, beaten up in water and drunk, have the effect of arresting habitual vomiting. The ashes of the vine, used with stale axle-grease, are good for tumours, act as a detergent upon fistulas, and speedily effect a radical cure; the same, too, with pains and contractions of the sinews, occasioned by cold. Applied with oil, they are useful for contusions, and with vinegar and nitre, for fleshy excrescences upon the bones: in combination with oil, they are good, too, for wounds inflicted by scorpions and dogs. The ashes of the bark, employed by themselves, restore the hair to such parts of the body as have suffered from the action of fire.

CHAP. 4.—OMPHACIUM EXTRACTED FROM THE VINE: FOURTEEN REMEDIES.

We have already[10] mentioned, when speaking of the composition of unguents, how omphacium is made from the grape, when it is just beginning to form: we shall now proceed to speak of its medicinal properties. Omphacium heals ulcerations of the humid parts of the body, such as the mouth, tonsillary

[6] This cannot be the bryony, Fée says, but simply a variety of the grape vine with white fruit. See further in c. 5 of this Book.

[7] "Impetigines."

[8] Alkaline ashes, which would differ but very little, Fée says, from those of other vegetable productions.

[9] This statement as to the caustic properties of the ashes is based upon truth.

[10] In B. xii. c. 60.

glands, and generative organs, for example; it is very good, too, for the sight, for rough spots upon the eyelids, ulcers at the corners of the eyes, films upon the eyes, running sores on all parts of the body, cicatrizations[11] slow in forming, and purulent discharges from the ears. The powerful action of omphacium is modified by the admixture of honey or raisin wine. It is very useful, too, for dysentery, spitting of blood, and quinsy.

CHAP. 5.—ŒNANTHE: TWENTY-ONE REMEDIES.

Next to omphacium comes œnanthe, a product of the wild vine, described by us already[12] when treating of the unguents. The most esteemed kind is that of Syria, the produce of the white vine[13] in the vicinity of the mountains of Antiochia and Laodicea in particular. Being of a cooling, astringent nature, it is used for sprinkling upon sores, and is employed as a topical application for diseases of the stomach. It acts also as a diuretic, and is good for maladies of the liver, head-ache, dysentery, cœliac affections, and attacks of cholera: for nausea, it is taken in doses of one obolus in vinegar. It acts as a desiccative upon running eruptions of the head, and is extremely efficacious for maladies of the humid parts of the body; hence it is that it is employed, with honey and saffron, for ulcers of the mouth, and for diseases of the generative organs and the fundament. It arrests looseness of the bowels, and heals eruptions of the eyelids and runnings at the eyes: taken with wine, it cures derangements of the stomach, and with cold water, spitting of blood.

The ashes of œnanthe are highly esteemed as an ingredient in eye-salves, and as a detergent for ulcers, whitlows, and hang-nails;[14] to obtain these ashes, it is put into an oven, and left there till the bread is thoroughly baked.

[11] Saracenus, upon Dioscorides, B. v. c. 6, thinks that Pliny, in copying from the Greek, has made a mistake here, and that he has taken *οὖλον*, the "gums," for *οὐλή*, a "cicatrix;" the corresponding passage in Dioscorides being *οὖλα πλαδαρὰ*, "flaccidity," or "humidity of the gums."

[12] In B. xii. c. 61. See also B. xiii. c. 2, B. xiv. c. 18, and B. xv. c. 7. Œnanthe, or vine-blossom, possesses no active medicinal properties, and the statements made here by Pliny are in all probability unfounded.

[13] Not the white vine, or Bryonia alba of modern botany, but probably some variety of the cultivated vine with white fruit. The flower of the bryony is inodorous, and would be of no utility in the composition of perfumes.

[14] "Pterygia."

As to massaris,[15] it is used as a perfume only. The renown attached to all these preparations is due solely to the innate greediness of mankind, which has racked its invention to gather the productions of the earth before they have arrived at maturity.

CHAP. 6.—GRAPES, FRESH GATHERED.

As to grapes when allowed to gain maturity, the black ones have more marked properties[16] than the others; and hence it is, that the wine made from them is not so agreeable. The white grapes, on the other hand, are sweeter, for, being transparent, the air penetrates them with greater facility.

Grapes fresh gathered are productive of flatulency, and disturb the stomach and bowels; hence it is that they are avoided in fevers, in large quantities more particularly. Indeed, they are very apt to produce oppression of the head, and to bring on the malady known as lethargy.[17] Grapes which have been gathered, and left to hang for some time, are much less[18] injurious, the exposure to the air rendering them beneficial even to the stomach, and refreshing to the patient, as they are slightly cooling, and tend to remove nausea and qualmishness.

CHAP. 7.—VARIOUS KINDS OF PRESERVED GRAPES: ELEVEN REMEDIES.

Grapes which have been preserved in wine or in must are trying to the head. Next to the grapes which have been left to hang in the air, are those which have been kept in chaff; but as to those which have been preserved among grape husks, they are injurious[19] to the head, the bladder, and the stomach,

[15] See B. xii. c. 61. It was prepared from vine-blossoms gathered in Africa.

[16] This remark is founded, in a great measure, upon fact. The skin of the black grape contains a colouring principle in considerable abundance, and a small proportion of tannin; that of the white grape possesses no colouring principle, but a considerable quantity of tannin. The white grape contains more saccharine matter than the black one, and they are both of them of a laxative nature.

[17] Littré remarks, that under the name of "lethargus," a febrile malady is probably meant, which belongs probably to the class of pseudo-continuous fevers.

[18] Fée thinks that in reality there can be little or no difference in their effects, but that, being eaten in larger quantities at the vintage than afterwards, it stands to reason that the result will be different.

[19] The fermentation, producing a certain amount of alcohol, would naturally produce this result.

though at the same time they arrest looseness of the bowels, and are extremely good for patients troubled with spitting of blood. When preserved in must, they are worse even in their effects than when kept among husks; boiled[20] must, too, renders them injurious to the stomach. It is the opinion of medical writers, that grapes kept[21] in rain-water are the most wholesome of all, even though they are by no means agreeable eating; for the benefit of them is particularly experienced in burning pains of the stomach, biliousness arising from a disordered liver, vomiting of bile, and attacks of cholera, as also dropsy and burning fevers.

Grapes kept in earthen pots sharpen the taste, the stomach, and the appetite; it is thought, however, that they are rendered a little heavy[22] by the exhalations from the husks with which they are covered.[23] If vine-blossoms are given to poultry, mixed with their food, they will never touch the grapes.[24]

CHAP. 8.—CUTTINGS OF THE VINE: ONE REMEDY.

Such cuttings of the vine as have borne grapes, have an astringent effect, when they are preserved in earthen[25] pots, more particularly.

CHAP. 9.—GRAPE-STONES: SIX REMEDIES.

Grape-stones, also, have a similar[26] property; it is through them that wine is so apt to produce head-ache. Parched and then pounded, they are beneficial for the stomach; and this powder is sprinkled, like polenta, in the beverage of patients suffering from dysentery, cœliac affections, and derangements of the stomach. A decoction of them is useful, also, as a fomentation for itch-scabs and prurigo.

20 "Sapa:" must boiled down to one-third.

21 This, as Fée remarks, is quite impossible; grapes put in rain-water would spoil immediately, and become totally unfit to eat.

22 By the transformation, namely, of the juices into alcohol.

23 See B. xiv. c. 3.

24 A notion quite unfounded, as Fée remarks. See B. xiv. c. 18.

25 A prejudice equally destitute of foundation.

26 Grape-stones have an astringent effect, and Fée states that in modern times an oil is extracted from them of an agreeable flavour, and applicable to many economical purposes. They are no longer used in medicine.

CHAP. 10.—GRAPE-HUSKS: EIGHT REMEDIES.

Grape-husks, used by themselves, are less injurious to the head and bladder than grape-stones are: beaten up with salt, they form an excellent liniment for inflammations of the mamillæ. A decoction of them, taken in drink, or employed as a fomentation, is good for inveterate dysentery, and cœliac affections.

CHAP. 11.—THE GRAPES OF THE THERIACA: FOUR REMEDIES.

The grape of the theriaca, of which we have already made mention[27] on the appropriate occasion, is eaten by way of antidote to the stings of serpents. It is recommended, too, to eat the young shoots of this tree, and to apply them topically. The wine and vinegar made from these grapes are productive of a similar salutary effect.[28]

CHAP. 12.—RAISINS, OR ASTAPHIS: FOURTEEN REMEDIES.

Raisins, the name given to which is "astaphis," would be injurious to the stomach, abdomen, and intestines, were it not for the stones within them, which act as a corrective.[29] When the stones are removed, raisins, it is thought, are beneficial to the bladder, and good for cough;[30] in the last case, the raisin of the white grape is considered the best. Raisins are good also for the trachea and the kidneys, and the wine made from them is particularly efficacious for the sting of the serpent called hæmorrhoïs.[31] In combination with meal of cummin or coriander, they are employed topically for inflammations of the testes. For carbuncles and diseases of the joints, the stones are removed, and the raisins are pounded with rue; if used for ulcers, the sores must be first fomented with wine.

Used with the stones, raisins are a cure for epinyctis, honeycomb ulcers,[32] and dysentery; and for gangrenes they are applied topically with radish rind and honey, being first boiled in oil. They are used with panax,[33] for gout and loose nails; and they

[27] In B. xiv. c. 22.

[28] Hence the name "theriaca," from *θήρ*, a "wild animal," and *ἀκέομαι*, "to cure."

[29] By reason, probably, of their astringent properties.

[30] Though no longer used medicinally, they are still considered to be good pectorals.

[31] See B. xx. cc. 23 and 81.

[32] "Ceria;" known in modern medicine as "favus."

[33] The Pastinaca opopanax of Linnæus. See B. xii. c. 57.

are sometimes eaten by themselves, in combination with pepper, for the purpose of cleansing the mouth and clearing the brain.

CHAP. 13—THE ASTAPHISAGRIA, OTHERWISE CALLED STAPHIS OR TAMINIA: TWELVE REMEDIES.

The wild astaphis, otherwise called staphis,[34] is by some persons erroneously called "uva taminia;"[35] for it is altogether a distinct plant from the other. It has a black, upright stem, with leaves resembling those of the labrusca,[36] and bears what we may call a pod,[37] rather than a grape, green, similar to a chick-pea in appearance, and enclosing a kernel of triangular form. The fruit of it ripens with the vintage and turns black, while the berries of the taminia,[38] as is well known, are red; this last, too, as we are aware, grows only in shaded spots, while the wild astaphis, on the other hand, loves a site that is exposed to the sun.

I would not recommend any one to use the kernels[39] of the wild astaphis as a purgative, as it is very doubtful whether they might not choke the patient; nor would I advise them to be employed for the purpose of attenuating the phlegm, as they are extremely irritating to the throat. Beaten up, however, and applied topically, they kill vermin[40] in the head and other parts of the body, more particularly if they are used with sandarach; they are very useful, too, for itch-scabs and prurigo. A decoction of the kernels is made with vinegar, for the cure of tooth-ache, diseases of the ears, cicatrices[41] that are slow in healing, and running sores.

The blossoms of the plant are beaten up and taken in wine

[34] Identified with the Delphinium staphis agria of Linnæus.

[35] "Taminian grape." [36] Or wild vine.

[37] The fruit is formed of three oblong capsules, containing a triangular seed of black brown colour, about the size of a kidney bean.

[38] This is not the white vine or bryony, mentioned in c. 16 of this Book, but the Tamus communis of Linnæus.

[39] The seeds, which are remarkably pungent and powerful in their effects, are only used, at the present day, in medicinal preparations for cattle.

[40] This is still done at the present day; to which it is indebted for its French name *l'herbe pediculaire*, or louse-plant.

[41] Pliny seems again to have fallen into the error of mistaking *οὖλον*, the "gums" for *οὐλή*, a "cicatrix;" the corresponding passage in Dioscorides, B. iv. c. 156, being "defluxions of the gums."

for stings[42] inflicted by serpents; but, as to the seed, I would strongly recommend its rejection, on account of its extremely pungent properties. Some persons give to this plant the name of "pituitaria,"[43] and use it as a common application for stings inflicted by serpents.

CHAP. 14.—THE LABRUSCA, OR WILD VINE: TWELVE REMEDIES.

The labrusca, too, produces an œnanthe, which has been described at sufficient length already:[44] by the Greeks the labrusca is known as the wild vine.[45] The leaves of it are thick and of a whitish colour, the stem is jointed, and the bark full of fissures: it bears grapes of a scarlet[46] hue, like the coccus, which are made use of by females for the purpose of improving the complexion, and removing spots upon the face. Pounded with the leaves and the juice extracted from the tree, these grapes are usefully employed for the treatment of lumbago and sciatica. A decoction of the root[47] in water, taken in two cyathi of Coan wine, promotes an alvine evacuation of aqueous secretions; for which reason it is prescribed for dropsy.

I am inclined to think that this is the plant that is commonly known as the "uva taminia;"[48] it is in great request as an amulet, and is employed, though as a gargle only, in cases of spitting blood; for which purpose, salt, thyme, and oxymel are added to it, care being taken not to swallow any of the mixture. It is generally looked upon as unsafe to employ it as a purgative.

CHAP. 15.—THE SALICASTRUM: TWELVE REMEDIES.

There is another plant,[49] similar to the labrusca, but found

[42] They would be of no use whatever, Fée says, for such a purpose.

[43] As tending to carry off "pituita," or phlegm.

[44] In B. xii. c. 61.

[45] "Ampelos agria." Fée observes, that this Chapter is full of errors, Pliny beginning by speaking of the wild vine, the variety Labrusca of the Vitis vinifera of Linnæus, and then proceeding to describe what is really the Bryonia dioica of modern botany, and applying its characteristics to the wild vine, or labrusca.

[46] This is not the case with the wild vine.

[47] The root of the wild vine is not of a purgative nature.

[48] As already stated, this is not identical with the wild vine, but is the Tamus communis of Linnæus.

[49] The Solanum dulcamara of modern botany has been suggested; though there is but little resemblance between the leaves of that variety of nightshade and those of the wild vine.

growing in willow-beds; for which reason it is known by a distinct name, though the uses to which it is applied are just the same. The name given to it is "salicastrum;" beaten up with oxymel, it displays marvellous efficacy in the removal of itch-scab and prurigo in men and cattle.

CHAP. 16.—THE WHITE VINE, OTHERWISE CALLED AMPELOLEUCE, STAPHYLE, MELOTHRON, PSILOTRUM, ARCHEZOSTIS, CEDROSTIS, OR MADON: THIRTY-ONE REMEDIES.

The white vine[50] is known to the Greeks by the various names of ampeloleuce, staphyle, melothron, psilotrum, archezostis, cedrostis, and madon. The twigs of this tree are jointed, thin, and climbing, with considerable interstices between the knots.[51] The leaves, attached to the numerous shoots, and about the size of an ivy leaf, are jagged at the edges, like that of the vine. The root of it is large and white, and very like a radish[52] at first; from it issue several stems, similar to asparagus in appearance. These stems, eaten boiled, are both purgative and diuretic. The leaves, too, as well as the stems, are possessed of caustic[53] properties; for which reason they are employed topically with salt, for phagedænic sores, gangrenes, and putrid ulcers of the legs. The fruit of the tree is in the form of grapes thinly scattered, the juice of which is red at first, and afterwards of a saffron colour. This fruit[54] is well known to curriers, who are in the habit of using it in preparing leather. It is employed also in the form of a liniment for itch-scabs and leprous spots; and a decoction of it with wheat, taken in drink, increases the milk in women when nursing. The root of this tree, so renowned for the numerous medicinal purposes to which it is applied, is pounded and taken in wine, in doses of two drachmæ, for the cure of stings inflicted by serpents:[55] it has the effect, also, of

50 The Bryonia alba of Linnæus; the bryony, white vine, or white jalap.

51 This description, Fée says, is pretty correct, and the account of its properties sufficiently exact. It is a violent poison, and is no longer used in medicine.

52 It is still called by the French *navet du diable*, or devil's turnip.

53 "Exulcerant corpus." Our author, Fée says, may here be taxed with some exaggeration.

54 The fruit is no longer used for this purpose.

55 It is a matter of extreme doubt if there is any foundation for this statement.

removing spots upon the face, moles and freckles, as well as scars and bruises: a decoction of it in oil is productive of a similar effect. A decoction of it is given to drink for epilepsy,[56] and to persons troubled with a disordered mind or suffering from vertigo, the dose being one drachma daily, for a whole year: taken in larger quantities, it is apt sometimes to disorder[57] the senses. It is possessed, also, of one very remarkable property, applied with water in the same manner as bryonia, of extracting splintered bones, for which reason it is known to some persons by the name of white bryonia: the other kind, however, which is black, is found to answer the purpose better, in combination with honey and frankincense.

The white vine disperses incipient suppurations, ripens them when they are inveterate, and acts as a detergent: it operates also as an emmenagogue and diuretic. An electuary is prepared from it for asthma and pains in the sides, as also for convulsions and ruptures. Taken in drink for thirty days together, in doses of three oboli, it has the effect of reducing the spleen; and it is used, in combination with figs, for the cure of hangnails[58] on the fingers. Applied with wine, it brings away the after-birth, and, taken in hydromel, in doses of one drachma, it carries off phlegm. The juice of the root should be extracted before the fruit ripens; applied either by itself or with meal of fitches, it imparts an improved complexion and a certain degree of suppleness to the skin: it has the effect also of repelling serpents. The root itself, too, beaten up with a pulpy fig, will remove wrinkles on the body, if the person using it takes care to walk a couple of stadia immediately after the application; otherwise it would leave marks upon the skin, unless, indeed, it were washed off immediately with cold water. The black vine, too, is better for this purpose than the white one, as the latter is very apt to be productive of itching.

[56] It would be productive of no good effect in such case, nor, indeed, in most of the cases here mentioned.

[57] "Purgat" is the reading given by Sillig; but, judging from the corresponding passage in Dioscorides, *ὑποταράττει*, "turbat," or "conturbat," is the proper reading.

[58] "Pterygiis."

CHAP. 17.—THE BLACK VINE, OTHERWISE CALLED BRYONA, CHIRONIA, GYNÆCANTHE, OR APRONIA: THIRTY-FIVE REMEDIES.

For there is also a black vine, properly known as the "bryonia,"[59] though by some persons it is called the "chironia," and by others the "gynæcanthe," or "apronia." It differs only from the one previously mentioned in its colour, which, as already stated,[60] is black. The shoots of this tree, which resemble asparagus in appearance, are preferred by Diocles for eating to real asparagus,[61] as a diuretic and for its property of reducing the spleen. It is found growing in shrubberies or reed-beds more particularly. The root of it, which is black outside, and of the colour of box within, is even more efficacious for the extraction of splintered bones than the plant last mentioned; in addition to which, it has the property of being a specific for excoriations of the neck in cattle. It is said, too, that if a person plants it around a farm, it will be sure to keep hawks away, and to preserve the poultry-yard[62] in perfect safety. Attached to the ankles, it tends to disperse the blood, congested or otherwise, which may have settled in those parts of the body, whether in human beings or in beasts of burden.

Thus much with reference to the various species of vines.

CHAP. 18.—MUST: FIFTEEN REMEDIES.

The various kinds of must[63] have different properties; some of them being black, some white, and others of intermediate shades of colour. There is a difference, too, between the kinds of must from which wine is made, and those from which raisin wine is prepared. The various degrees of care and attention on the part of the maker, render the differences that

[59] This is in reality not the modern bryony, or white vine, but the Tamus communis of Linnæus, the black vine, or *taminier* of the French, the uva taminia, probably, of Chapter 13.

[60] In the last Chapter.

[61] The shoots of the Tamus communis are still eaten in Tuscany as a substitute for asparagus, to which, however, they are inferior in quality. It is there known by the name of *tamaro*.

[62] An absurdity, as Fée remarks, not worthy of discussion. The same, too, as to the next assertion.

[63] Of course there are as many varieties of must, or grape-juice, as there are of wines. Must is of a purgative and emollient nature, but is no longer employed in medicine.

already exist, quite innumerable; we shall therefore content ourselves with taking a general view only of their medicinal uses.

Every kind of must is unwholesome to the stomach, but of a soothing nature to the venous system. Taken off at a draught, immediately after the bath, must is fatal[64] in its effects. It acts as an antidote[65] to cantharides and stings inflicted by serpents, those of the hæmorrhois and the salamandra[66] in particular. It is productive of head-ache, and is prejudicial to the throat, but it is good for the kidneys, liver, and inner coat of the bladder, by reason of its lubricating properties. It is particularly effectual also in cases of injuries inflicted by the insect known as the "buprestis."[67]

Taken with oil as a vomit, it neutralizes the bad effects of opium,[68] milk that has curdled upon the stomach, hemlock, dorycnium,[69] and other poisons.[70] For all these purposes, however, white must is not so efficacious, while must prepared from raisins of the sun has a more pleasant flavour, and is productive of a less degree of oppression to the head.

CHAP. 19.—PARTICULARS RELATIVE TO WINE.

We have already[71] described the various kinds of wine, the numerous differences which exist between them, and most of the properties which each kind possesses. There is no subject that presents greater difficulties than this, or, indeed, a more varied field for discussion, it being extremely difficult to pronounce whether wine is more generally injurious in its effects, or beneficial. And then, in addition to this, how very uncertain is it, whether, the moment we have drunk it, it will be productive of salutary results, or turn out no better than so much poison! However, it is only with reference to its medicinal properties, that we are now about to speak of it.

[64] See c. 30 of this Book. Of course there is little or no truth in this assertion.

[65] In reality it has no such effect.

[66] See B. x. c. 86.

[67] See B. xxii. c. 36, and B. xxx. c. 10.

[68] In cases of poisoning by opium or hemlock, the use of it, Fée says, would be prejudicial.

[69] See B. xxi. c. 105.

[70] "Toxica."

[71] In B. xiv. cc. 8, 9, 10. It is impossible, with any degree of accuracy, to discuss the properties of these various wines, as they no longer exist.

Asclepiades has composed a whole treatise (which has thence received its name[73]) on the proper methods of administering wine; and the number of commentators who have since written on this treatise, is almost innumerable. For my own part, with all that gravity which becomes a Roman, and one zealous for the furtherance of liberal pursuits, I shall enter into a careful examination of this subject, not, indeed, in the character of a physician, but as a careful investigator of the effects which wine is likely to produce upon the health of mankind. To treat, however, of the medicinal properties of each individual kind, would be a labour without end, and quite inexhaustible; the more so, as the opinions of medical men are so entirely at variance upon the subject.

CHAP. 20.—THE SURRENTINE WINES: THREE REMEDIES. THE ALBAN WINES: TWO REMEDIES. THE FALERNIAN WINES: SIX REMEDIES.

Our ancestors set the highest value upon the wines of Surrentum;[74] but at a later period the preference was given to the Alban, or the Falernian wines. More recently, again, other varieties of wine have come into fashion, quite in accordance with that most unreasonable mode of proceeding, according to which, each person, as he finds a wine most to his taste, extols it as superior to all others. Suppose, now, that all persons were quite agreed as to the superiority of some particular kind of wine, how small a proportion of mankind would be enabled to make use of it! As it is, even the rich never drink it in an unsophisticated state; the morals of the age being such, that it is the name only of a vintage that is sold, the wines being adulterated the very moment they enter the vat. Hence it is, by Hercules!—a thing truly astounding—that, in reality, a wine is more innoxious in its effects, in proportion as it enjoys a less extended renown. The three kinds, however, of which we have made mention, appear to have maintained, with the least diminution, their ancient repute.

The Falernian wine, if a person should be desirous to know the marked characteristics of wines according to age, is injurious to the health, either too new or too old; at fifteen

[73] "Cognominatum" appears to be a better reading than "cognominatus," which Sillig has adopted; as it is much more probable that the work received its name from the subject than that the writer did.

[74] All these wines are described in B. xiv.

years it begins to be of medium age. Falernian wine of this age, taken cold, is good for the stomach, but not when taken warm. For an inveterate cough and for quartan fevers, it is a good plan to drink it neat, fasting. There is no wine that quickens the action of the venous system so much as this; it acts astringently upon the bowels, and is feeding to the body. It has been thought, however, that this wine is productive of injury to the sight, and that it is far from beneficial to the nerves[75] and the bladder.

The Alban wines are more salutary to the nervous system, but the sweet kinds are not so beneficial to the stomach. The rough wines of Alba are even better than those of Falernum, but they do not promote the digestion so well, and have a slight tendency to overload the stomach.

As to the Surrentine wines, they have no such effect upon the stomach, nor are they at all trying to the head; they have the property also of arresting defluxions of the stomach and intestines. The Cæcuban wines are no longer grown.

CHAP. 21.—THE SETINE WINES; ONE OBSERVATION UPON THEM. THE STATAN WINES; ONE OBSERVATION UPON THEM. THE SIGNIAN WINES; ONE REMEDY.

Among the wines, however, which still exist, those of Setia[76] promote the digestion, having more strength than the Surrentine wines, and more roughness than those of Alba. The wines of Falernum are not so powerful. Those of Stata are but very little inferior in quality to the wines already mentioned. It is universally agreed that the wines of Signia are extremely beneficial in cases of derangement of the bowels.

CHAP. 22.—OTHER WINES: SIXTY-FOUR REMEDIES.

As to the other wines, they may be spoken of in general terms. By the use of wine, the human vigour, blood, and complexion are improved. It is wine that makes up for all the difference between the middle or temperate zone, and those which lie on either side of it, the juice of the vine conferring as much vigour and robustness upon the inhabitants of our part of the earth as the rigorousness[77] of the climate does

75 "Nervis." As to the meaning of this word, see B. xi. c. 88.

76 These wines also are described in B. xiv.

77 "Feritas."

upon the people there. Milk, used as a beverage, strengthens the bones, liquids extracted from the cereals nourish the sinews, and water imparts nutriment to the flesh: hence it is that persons who confine themselves to these several liquids as a beverage, are of a less ruddy complexion than the wine-drinker, less robust, and less able to endure fatigue. By the use of wine in moderation the sinews are strengthened, but taken in excess it proves injurious to them; the same, too, with the eyes. Wine refreshes the stomach, sharpens the appetite, takes off the keen edge of sorrows and anxieties, warms the body, acts beneficially as a diuretic, and invites sleep. In addition to these properties, it arrests vomiting, and we find that pledgets of wool, soaked in wine, and applied to abscesses, are extremely beneficial. According to Asclepiades, the virtues possessed by wine are hardly equalled by the majestic attributes of the gods themselves.

Old wine bears admixture with a larger quantity of water, and acts more powerfully as a diuretic, though at the same time it is less effectual for quenching thirst. Sweet wine, again, is less inebriating, but stays longer on the stomach, while rough wine is more easy of digestion. The wine that becomes mellow with the greatest rapidity is the lightest, and that which becomes sweeter the older it is, is not so injurious to the nerves. Wines that are rich and black,[78] are not so beneficial to the stomach; but, at the same time, they are more feeding to the body. Thin-bodied rough wines are not so feeding, but are more wholesome to the stomach, and pass off more speedily by urine, though they are all the more liable to fly to the head; a remark which will apply, once for all, to liquids of every kind.

Wine that has been mellowed by the agency of smoke is extremely unwholesome—a fraudulent method of preparation that has been invented in the wine-lofts[79] of the retail dealers. At the present day, however, this plan is adopted in private families even, when it is wished to give the appearance of maturity to wines that have become carious.[80] Indeed, this term *carious* has been used very appositely by the ancients with reference to wines; for we find that in the case of wood even, smoke exercises a caustic effect upon the carious parts, and

[78] The colour of our Port.

[79] "Apothecis."

[80] "Cariem trahunt."

eats them away; and yet we, on the other hand, persuade ourselves that an adventitious age may be imparted to wines by the bitter twang derived from smoke![81]

Those wines which are extremely pale, become more wholesome the older they are. The more generous[82] a wine is, the thicker it becomes with age; while, at the same time, it contracts a bitter flavour, which is far from exercising a beneficial effect upon the health. To season another wine, that is not so old, with this, is nothing less than to make an unwholesome preparation. The more of its own natural flavour[83] a wine possesses, the more wholesome it is; and the best age for a wine is that which naturally belongs to it, a medium age being the one that is the most generally esteemed.

CHAP. 23.—SIXTY-ONE OBSERVATIONS RELATIVE TO WINE.

Persons whose wish it is to make flesh, or to keep the bowels relaxed, will do well to drink while taking their food. Those, on the other hand, who wish to reduce themselves, or prevent the bowels from being relaxed, should abstain from drinking while taking their meals, and drink but a very little only when they have done eating. To drink wine fasting is a fashion of recent introduction[84] only, and an extremely bad one for persons engaged in matters of importance, and requiring a continued application of the mental faculties. Wine, no doubt, was taken fasting in ancient times, but then it was as a preparative for sleep and repose from worldly cares; and it is for this reason that, in Homer,[85] we find Helen presenting it to the guests before the repast. It is upon this fact, too, that the common proverb is founded, which says that "wisdom is obscured by wine."[86] It is to wine that we men are indebted for being the only animated beings that drink without being thirsty. When drinking wine, it is a very good plan to take a draught of water every now and then; and to take one long draught of it at the last, cold water taken internally having the effect of instantaneously dispelling inebriation.

[81] While the ancients thought that the cariousness or results of old age were removed by the agency of smoke.

[82] See B. xiv. c. 6.

[83] "Saliva."

[84] In the time of the Emperor Tiberius. See B. xiv. c. 28.

[85] Odyssey, B. iv. l. 219, *et seq.*

[86] "Sapientiam vino obumbrari."

It is strongly recommended by Hesiod[87] to drink undiluted wine[88] for twenty days before the rising of the Dog-star, and as many after. Pure wine, too, acts as an antidote to hemlock, coriander,[89] henbane, mistletoe, opium, mercury, as also to stings inflicted by bees, wasps, hornets, the phalangium, serpents, and scorpions; all kinds of poison, in fact, which are of a cold nature, the venom of the hæmorrhois and the prester,[90] in particular, and the noxious effects of fungi. Undiluted wine is good, too, in cases of flatulency, gnawing pains in the thoracic organs, excessive vomitings at the stomach, fluxes of the bowels and intestines, dysentery, excessive perspirations after prolonged fits of coughing, and defluxions of various kinds. In the cardiac[91] disease, it is a good plan to apply a sponge soaked in neat wine to the left breast: in all these cases, however, old white wine is the best. A fomentation of hot wine applied to the genitals of beasts of burden is found to be very beneficial; and, introduced into the mouth, with the aid of a horn, it has the effect of removing all sensations of fatigue.[92] It is asserted that in apes, and other quadrupeds with toes, the growth will be impeded if they are accustomed to drink undiluted wine.[93]

CHAP. 24.—IN WHAT MALADIES WINE SHOULD BE ADMINISTERED; HOW IT SHOULD BE ADMINISTERED, AND AT WHAT TIMES.

We shall now proceed to speak of wine in relation to its medicinal uses. The wines of Campania[94] which have the least body, are the most wholesome beverage for persons of rank and station; and for the lower classes[95] the best kind of wine is that which is the most pleasant to the person who drinks it, provided he is in robust health. For persons of all ranks, however, the most serviceable wine is that the strength

[87] Works and Days, l. 594.

[88] Merum."

[89] It is surprising, as Fée says, to find coriander enumerated among the poisons. Mistletoe, too, and mercury are neither of them poisons. As to hemlock, see B. xiv. c. 7.

[90] See Lucan's Pharsalia, B. ix. ll. 722, 791.

[91] See B. xi. c. 71.

[92] This method is still employed with race-horses. See B. xiv. c. 28.

[93] It is still a very prevalent notion that the growth of dogs is stunted by giving them raw spirits.

[94] The wines of Surrentum and Stata were Campanian wines.

[95] "Volgo."

of which has been reduced by the strainer;[96] for we must bear in mind that wine is nothing else but juice of grapes which has acquired strength by the process of fermentation. A mixture of numerous kinds of wine is universally bad, and the most wholesome wine of all is that to which no ingredient has been added when in a state of must; indeed, it is still better if the vessels even in which it is kept have never been pitched.[97] As to wines which have been treated with marble, gypsum, or lime,[98] where is the man, however robust he may be, that has not stood in dread of them?

Wines which have been prepared with sea-water[99] are particularly injurious to the stomach, nerves, and bladder. Those which have been seasoned with resin are generally looked upon as beneficial to a cold stomach, but are considered unsuitable where there is a tendency to vomit: the same, too, with must, boiled grape-juice,[1] and raisin wine. New wines seasoned with resin are good for no one, being productive of vertigo and head-ache: hence it is that the name of "crapula"[2] has been given equally to new resined wines, and to the surfeit and head-ache which they produce.

The wines above mentioned[3] by name, are good for cough and catarrh, as also for cœliac affections, dysentery, and the catamenia. Those wines of this sort which are red[4] or black,[4] are more astringent and more heating than the others. Wines which have been seasoned with pitch only, are not so injurious; but at the same time we must bear in mind that pitch is neither more nor less than resin liquefied[5] by the action of fire. These pitched wines are of a heating nature, promote the digestion, and act as a purgative; they are good, also, for the chest and the bowels, for pains in the uterus, if there are no signs of fever, for inveterate fluxes, ulcerations, ruptures, spasms, suppurated abscesses, debility of the sinews, flatulency,

[96] "Sacco." A strainer of linen cloth. See B. xiv. c. 28, and B. xix. c. 19. While it diminished the strength, however, it was considered to injure the flavour.

[97] In that case, Fée says, they would differ but little from the wines of the present day. See B. xiv. c. 25.

[98] See B. xiv. c. 24.

[99] See B. xiv. cc. 9, 10.

[1] "Sapa."

[2] See B. xiv. c. 25.

[3] Surrentine, Alban, Falernian, &c.

[4] The colour of Tent and Burgundy.

[4*] The colour of Port.

[5] See B. xiv. c. 25.

cough, asthma, and sprains, in which last case they are applied in uncleansed wool. For all these purposes the wine is preferred which has naturally the flavour of pitch,[6] and is thence known as "picatum:" it is generally agreed, however, that the produce of the vine called "helvennaca,"[7] if taken in too large a quantity, is trying to the head.

In reference to the treatment of fever, it is well known that wine should never be given, unless the patient is an aged person, or the symptoms are beginning to abate. In cases of acute fever, wine must never be given, under any circumstance, except when there is an evident remission of the attack, and more particularly if this takes place in the night, for then the danger is diminished by one half, there being the probability of the patient sleeping off the effects of the wine. It is equally forbidden, also, to females just after delivery or a miscarriage, and to patients suffering from over-indulgence of the sexual passions; nor should it be given in cases of head-ache, of maladies in which the attacks are attended with chills at the extremities, of fever accompanied with cough, of tremulousness[8] in the sinews, of pains in the fauces, or where the disease is found to concentrate itself in the iliac regions. Wine is strictly forbidden, too, in cases of induration of the thoracic organs, violent throbbings of the veins, opisthotony, tetanus, asthma, and hardness of breathing attended with fever.

Wine is far from beneficial for a patient, when the eyes are fixed and rigid, and when the eyelids are immoveable, or else relaxed and heavy; in cases, too, where, with an incessant nictation, the eyes are more than usually brilliant, or where the eyelids refuse to close—the same, too, if that symptom should occur in sleep—or where the eyes are suffused with blood, or congealed matter makes its appearance in the corners of those organs. The same rule should be observed, also, when the tongue is heavy and swollen, or when there is an impediment from time to time in the speech, when the urine is passed with difficulty, or when a person has been seized with a sudden fright, with spasms, or recurrent fits of torpor, or experiences seminal discharges during sleep.

[6] See B. xiv. cc. 3, 4.
[7] See B. xiv. c. 4: Vol. III. p. 227.
[8] "Tremore nervorum;" perhaps "nervousness."

CHAP. 25.—NINETY-ONE OBSERVATIONS WITH REFERENCE TO WINE.

It is a well-ascertained fact, that in the cardiac [9] disease the only resource is wine. According to some authorities, however, wine should only be given when the attacks come on, while others, again, are of opinion, that it must only be administered between the attacks; it being the object with the former to arrest the profuse perspirations, while the latter base their practice on an impression that it may be given with more safety at a moment when the malady has diminished in intensity; and this I find is the opinion entertained by most people. In all cases, wine must only be administered just after taking food, never after sleep, and under no circumstances after any other kind of drink, or in other words, only when the patient is thirsty; in no case whatever should it be given, except at the very last extremity. Wine is better suited to males than to females, to aged people than to youths, to youths than to children, and to persons who are used to it than to those who are not in the habit of taking it; winter, too, is a better time for using it than summer. As to the quantity to be prescribed, and the proportion of water to be mixed with it, that depends entirely upon the strength of the wine; it is generally thought, however, that the best proportions are one cyathus of wine and two of water. If, however, there is a derangement of the stomach, and if the food does not pass downward, the wine must be given in a larger proportion.

CHAP. 26.—ARTIFICIAL WINES.

Among the artificial wines, the preparation of which we have [10] described, [there are some which],[11] I think, are no longer made; in addition to which, it would be a mere loss of time to enlarge upon their medicinal effects, having expatiated elsewhere upon the properties of the various elements of which they are composed. And then, besides, the conceits of the medical men in relation to these wines have really passed all bounds; they pretend, for instance, that a wine extracted

[9] See B. xi. c. 71. There is little doubt that generous wine promotes the rapid circulation of the blood.

[10] In B. xiv. cc. 18, 19, 20.

[11] In accordance with the suggestion of Sillig, we insert "sunt quæ," otherwise the passage is defective.

from turnips [12] is good for recruiting the exhausted strength, after exercises in arms or on horseback; and, not to speak of other preparations, they attribute a similar effect to wine of juniper.[13] Who is there, too, that would think of looking upon wormwood wine [14] as superior in its effects to wormwood itself?

I shall pass in silence the rest of these preparations, and among them palm wine,[15] which is injurious to the head, and is beneficial only as a laxative to the bowels, and as a cure for spitting of blood. We cannot, however, look upon the liquor which we have spoken of [16] under the name of "bion," as being an artificial wine; for the whole art of making it consists merely in the employment of grapes before they have arrived at maturity. This preparation is extremely good for a deranged stomach or an imperfect digestion, as also for pregnancy, fainting fits, paralysis, fits of trembling, vertigo, gripings of the bowels, and sciatica. It is said, too, that in times of pestilence, and for persons on a long journey, this liquid forms a beverage of remarkable efficacy.

CHAP. 27.—VINEGAR: TWENTY-EIGHT REMEDIES.

Wine, even when it has lost its vinous properties, still retains some medicinal virtues. Vinegar possesses cooling properties in the very highest degree, and is no less efficacious as a resolvent; it has the property, too, of effervescing,[17] when poured upon the ground. We have frequently had occasion, and shall again have occasion, to mention the various medicinal compositions in which it forms an ingredient. Taken by itself, it dispels nausea and arrests hiccup, and if smelt at, it will prevent sneezing: retained in the mouth, it prevents a person from being inconvenienced by the heat[18] of the bath. It is used as a beverage also, in combination with water,[19] and employed

[12] This would be a vigorous liquor, Fée thinks, and a good tonic; similar, in fact, to the modern antiscorbutic wines.

[13] Fée queries whether this was made from the fermented berries, or from an infusion of them in wine. In the former case it would bear some slight resemblance to our gin.

[14] "Apsinthites." See B. xiv. c. 19.

[15] See B. xiii. c. 9.

[16] In B. xiv. c. 10.

[17] The vinegar of the present day does not appear to have any such property.

[18] Celsus says the same thing, B. i. c. 3.

[19] "Posca," or vinegar and water, sometimes mixed with eggs, was the common drink of the lower classes at Rome, and of the soldiers when on service.

as a gargle, it is found by many to be very wholesome to the stomach, particularly convalescents and persons suffering from sun-stroke; used as a fomentation, too, this mixture is extremely beneficial to the eyes. Vinegar is used remedially when a leech has been swallowed;[20] and it has the property of healing leprous sores,[21] scorbutic eruptions, running ulcers, wounds inflicted by dogs, scorpions, and scolopendræ, and the bite of the shrew-mouse. It is good, too, as a preventive of the itching sensations produced by the venom of all stinging animals, and as an antidote to the bite of the millepede.

Applied warm in a sponge, in the proportion of three sextarii to two ounces of sulphur or a bunch of hyssop, vinegar is a remedy for maladies of the fundament. To arrest the hæmorrhage which ensues upon the operation[22] of lithotomy, and, indeed, all other operations of a similar nature, it is usual to apply vinegar in a sponge, and at the same time to administer it internally in doses of two cyathi, the very strongest possible being employed. Vinegar has the effect also of dissolving coagulated blood; for the cure of lichens, it is used both internally and externally. Used as an injection, it arrests looseness of the bowels and fluxes of the intestines; it is similarly employed, too, for procidence of the rectum and uterus.

Vinegar acts as a cure for inveterate coughs, defluxions of the throat, hardness of breathing, and looseness of the teeth: but it acts injuriously upon the bladder and the sinews, when relaxed. Medical men were for a long time in ignorance how beneficial vinegar is for the sting of the asp; for it was only recently that a man, while carrying a bladder[23] of vinegar, happening to be stung by an asp upon which he trod, found to his surprise that whenever he put down the bladder he felt the sting, but that when he took it up again, he seemed as though he had never been hurt; a circumstance which at once suggested to him the remedial properties of the vinegar, upon drinking some of which he experienced a cure. It is with vinegar, too,

[20] There is little doubt that it would be advantageous to employ vinegar in such a case; the animal would be compelled to withdraw its hold, and vomiting would be facilitated. Strong salt and water, Fée thinks, would be still more efficacious.

[21] It would be of no use whatever, Fée thinks, in any of these cases.

[22] An operation which, though known to the Greeks and Romans, appears to have been completely lost sight of in the middle ages.

[23] Or leather bag, "utrem."

and nothing else, that persons rinse the mouth after sucking the poison from a wound. This liquid, in fact, exercises a predominance not only upon various articles of food, but upon many other substances as well. Poured upon rocks in considerable quantities, it has the effect of splitting[24] them, when the action of fire alone has been unable to produce any effect thereon. As a seasoning, too, there is no kind that is more agreeable than vinegar, or that has a greater tendency to heighten the flavour of food. When it is employed for this purpose, its extreme tartness is modified with burnt bread or wine, or else it is heightened by the addition of pepper, and of laser;[25] in all cases, too, salt modifies its strength.

While speaking of vinegar, we must not omit to mention a very remarkable case in connexion with it: in the latter years of his life, M. Agrippa was dreadfully afflicted with gout, so much so, in fact, that he was quite unable to endure the torments to which he was subjected. Upon this, guided by the ominous advice of one of his medical attendants, though unknown to Augustus, at the moment of an extremely severe attack he plunged his legs into hot vinegar, content to purchase exemption from such cruel torments as he suffered, if even at the price of all use and sensation in those limbs, * * * * *.[26]

CHAP. 28. (2.)—SQUILL VINEGAR: SEVENTEEN REMEDIES.

Squill vinegar is the more esteemed, the older it is. In addition to the properties which we have already[27] mentioned, it is useful in cases where the food turns sour upon the stomach, a mere taste of it being sufficient to act as a corrective. It is good, too, when persons are seized with vomiting, while

[24] See B. xxx. c. 21. From Livy and Plutarch we learn that Hannibal employed this method of splitting the rocks when making his way across the Alps. Fée, at considerable length, disputes the credibility of this account, and thinks it only a wonderful story invented by the Romans to account for their defeat by Hannibal.

[25] See B. xix. c. 5.

[26] Sillig has little doubt that this passage is incomplete, and that the end of it should be to the effect, "the result of which was, that he was effectually cured." A very similar story is related of Servius Clodius, a Roman knight, in B. xxv. c. 7.

[27] In B. xx. c. 39. It is still employed in medicine; but the statements here made, as Fée says, do not merit a serious discussion.

fasting, having the effect of indurating the passages of the throat and stomach. It is a corrective, also, of bad breath, strengthens the teeth and gums, and improves the complexion.

Used as a gargle, squill vinegar remedies hardness of hearing, and opens the passages of the ears, while at the same time it tends to improve the sight. It is very good, too, for epilepsy, melancholy, vertigo, hysterical suffocations, blows, falls with violence, and extravasations of blood in consequence, as also for debility of the sinews, and diseases of the kidneys. In cases of internal ulceration, however, the use of it must be avoided.

CHAP. 29.—OXYMELI: SEVEN REMEDIES.

The following, as we learn from Dieuches, was the manner in which oxymeli[28] was prepared by the ancients. In a cauldron they used to put ten minæ of honey, five heminæ of old vinegar, a pound and a quarter of sea-salt, and five sextarii of rain-water; the mixture was then boiled together till it had simmered some ten times, after which it was poured off, and put by for keeping. Asclepiades, however, condemned this preparation, and put an end to the use of it, though before his time it used to be given in fevers even. Still, however, it is generally admitted that it was useful for the cure of stings inflicted by the serpent known as the "seps,"[29] and that it acted as an antidote to opium[30] and mistletoe. It was usefully employed also, warm, as a gargle for quinsy and maladies of the ears, and for affections of the mouth and throat; for all these purposes, however, at the present day, oxalme is employed, the best kind of which is made with salt and fresh vinegar.

CHAP. 30.—SAPA: SEVEN REMEDIES.

Sapa[31] has a close affinity with wine, being nothing else

[28] See B. xiv. c. 21. The modern oxymel, as Fée remarks, consists of honey dissolved in white vinegar, and bears no resemblance to the monstrous composition here described, and which no stomach, he says, could possibly support.

[29] See Lucan's Pharsalia, B. ix. ll. 723, 776.

[30] Fée thinks that there may be some foundation for this statement, as vinegar acts efficaciously as a remedy to the effects of narcotic poisons. Mistletoe, as already stated, is not a poison.

[31] Grape-juice boiled down to one-third. See B. xiv. c. 11.

but must boiled down to one third: that which is prepared from white must is the best. It is used medicinally in cases of injuries inflicted by cantharides, the buprestis,[32] the pine-caterpillars known as pityocampæ,[33] salamanders, and all venomous bites and stings. Taken with onions it has the effect of bringing away the dead fœtus and the after-birth. According to Fabianus, it acts as a poison, if taken by a person fasting, immediately after the bath.[34]

CHAP. 31.—LEES OF WINE: TWELVE REMEDIES.

Next in the natural order come the lees of these several liquids. The lees of[35] wine are so extremely powerful as to prove fatal to persons on descending into the vats.[36] The proper precaution for preventing this, is to let down a light first, which so long as it refuses to burn, is significant of danger. Wine-lees, in an unrinsed[37] state, form an ingredient in several medicinal preparations: with an equal proportion of iris,[38] a liniment is prepared from them for purulent eruptions; and either moist or dried, they are used for stings inflicted by the phalangium, and for inflammations[39] of the testes, mamillæ, or other parts of the body. A decoction of wine-lees is prepared, too, with barley-meal and powdered frankincense; after which it is first parched and then dried. The test of its being properly boiled, is its imparting, when cold, a burning sensation to the tongue. When left exposed to the air, wine-lees very rapidly lose their virtues; which, on the other hand, are greatly heightened by the action of fire.

Wine-lees are very useful, too, boiled with figs, for the cure

[32] See c. 18 of this Book. The account here given of the medicinal properties of sapa is altogether unfounded.

[33] A worm that grows in the pine-tree, the Phalæna bombyx pityocampa of Linnæus.

[34] A mere absurdity, of course. See c. 18 of this Book.

[35] The lees of wine are charged with sub-tartarate of potash, a quantity of colouring matter more or less, and a small proportion of wine. They are no longer used in medicine. Under the term "fæx vini," Pliny includes the pulp or husks of grapes after the must has been expressed.

[36] In consequence of the carbonic gas disengaged before the fermentation is finished, asphyxia being the result.

[37] By the use of this term he evidently means grape husks.

[38] Or flower-de-luce. See B. xxi. cc. 19, 83.

[39] Wine-lees would only have the effect of increasing the inflammation.

of lichens and cutaneous eruptions; they are applied also in a similar manner to leprous sores and running ulcers. Taken in drink, they act as an antidote to the poison of fungi, and more particularly if they are undiluted; boiled and then rinsed, they are used in preparations for the eyes. They are employed also topically for diseases of the testes and generative organs, and are taken in wine for strangury. When wine-lees have lost their strength, they are still useful for cleansing the body and scouring clothes, in which case they act as a substitute for gum acacia.[40]

CHAP. 32.—LEES OF VINEGAR: SEVENTEEN REMEDIES.

The lees of vinegar,[41] as a matter of course, considering the material from which they are derived, are much more acrid than those of wine, and more caustic in their effects. This substance prevents the increase of suppuration, and, employed topically, is good for the stomach, intestines, and regions of the abdomen. It has the property also of arresting fluxes of those parts, and the catamenia when in excess; it disperses inflamed tumours which have not come to a head, and is a cure for quinsy. Applied with wax, it is curative of erysipelas. It reduces swellings of the mamillæ when gorged with milk, and removes malformed nails. Employed with polenta, it is very efficacious for the cure of stings inflicted by the serpent called cerastes;[42] and in combination with melanthium,[43] it heals bites inflicted by crocodiles and dogs.

Vinegar lees, too, by being subjected to the action of fire, acquire additional strength.[44] Mixed in this state with oil of mastich, and applied to the hair, they turn[45] it red in a single night. Applied with water in linen, as a pessary, they act as a detergent upon the uterus.

[40] See B. xxiv. c. 67.

[41] Their properties are similar to those of wine-lees, but they are no longer used in medicine. The statements here made by our author, Fée remarks, are entirely fabulous.

[42] Or horned serpent. See B. xi. c. 45.

[43] See B. xx. c. 71.

[44] This, as Fée observes, is probably the case.

[45] It must be remembered that red hair was greatly admired by the Romans.

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CHAP. 33.—LEES OF SAPA: FOUR REMEDIES.

The lees[47] of sapa are used for the cure of burns, it being the best plan to employ with them the down that grows on the reed; a decoction too, of these lees, is good for the cure of an inveterate cough. They are boiled also in a saucepan with salt and grease as an ointment for tumours of the jaws and neck.

CHAP. 34. (3.)—THE LEAVES OF THE OLIVE: TWENTY-THREE REMEDIES.

The next rank, after the vine, clearly belongs to the olive. The leaves of the olive-tree are astringent,[48] detergent, and binding in the highest degree. Chewed and applied to sores, they are of a healing nature; and applied topically with oil, they are good for head-ache. A decoction of them with honey makes a good liniment for such parts of the body as have been subjected to cauterization, as also for inflammations of the gums, whitlows, and foul and putrid ulcers: combined with honey, they arrest discharges of blood from the nervous[49] parts of the body. The juice of olive leaves is efficacious for carbuncular ulcers and pustules about the eyes, and for procidence of the pupil; hence it is much employed in the composition of eye-salves, having the additional property of healing inveterate runnings of the eyes, and ulcerations of the eyelids.

This juice is extracted by pouring wine and rain-water upon the leaves, and then pounding them; after which the pulp is dried and divided into lozenges. Used with wool, as a pessary, this preparation arrests menstruation when in excess, and is very useful for the treatment of purulent sores, condylomata, erysipelas, spreading ulcers, and epinyctis.

CHAP. 35—THE BLOSSOM OF THE OLIVE: FOUR REMEDIES.

The blossom,[50] too, of the olive-tree possesses similar pro-

[47] The thicker parts of boiled grape-juice. These lees have no affinity with those of wine or vinegar.

[48] They are rich in tannin and gallic acid, and Fée states that they have been proposed as a substitute for quinine. The statements here made by Pliny, he says, in reference to their properties, are hypothetical.

[49] "Nervosis."

[50] No medicinal use is now made of it, but its properties would be very similar to those of the leaves.

perties. The young branches are burnt when just beginning to blossom, and of the ashes a substitute for spodium[51] is made, upon which wine is poured, and it is then burnt afresh. To suppurations and inflamed tumours these ashes are applied, or else the leaves, beaten up with honey; for the eyes, they are used with polenta. The juice which exudes[52] from the wood, when burnt in a green state, heals lichens, scaly eruptions, and running ulcers.

As to the juice[53] which exudes naturally from the olive-tree, and more particularly that of Æthiopia, we cannot be sufficiently surprised that authors should have been found to recommend it as an application for tooth-ache, and to tell us at the same time that it is a poison, and even that we must have recourse to the wild olive for it. The bark of the roots of the olive, as young and tender a tree as possible being selected, scraped and taken every now and then in honey, is good[54] for patients suffering from spitting of blood and purulent expectorations. The ashes of the tree itself, mixed with axle-grease, are useful for the cure of tumours, and heal fistulas by the extraction of the vicious humours which they contain.

CHAP. 36.—WHITE OLIVES: FOUR REMEDIES. BLACK OLIVES: THREE REMEDIES.

White olives are wholesome for the upper regions of the stomach, but not so good for the bowels. Eaten by themselves, habitually as a diet, quite fresh and before they are preserved, they are remarkably serviceable, having the effect of curing gravel,[55] and of strengthening the teeth when worn or loosened by the use of meat.

[51] Impure metallic oxide. See B. xix. c. 4, and B. xxxiv. c. 52. The ashes of the branches would be an impure sub-carbonate of potass, which would act, Fée says, as a powerful irritant.

[52] A sort of pyroligneous acid, which would have the noxious effect of throwing inward the eruptions.

[53] This juice or tear (lacrima) Fée thinks to be the same with the Enhæmon, mentioned in B. xii. c. 38; the properties of which are quite inactive, though Dioscorides, B. i. c. 139, speaks of it as a poison.

[54] Probably in consequence of the tannin and gallic acid, which it contains in great abundance.

[55] Fée says that all these statements as to the medicinal properties of olives are false.

Black olives, on the other hand, are not so wholesome for the upper regions of the stomach, but are better for the bowels; they are not good, however, for the head or for the eyes. Both kinds, pounded and applied topically, are good for the cure of burns, but the black olive is sometimes chewed first, and instantly applied to the sore, for the purpose of preventing blisters from forming. Colymbades[56] act as a detergent for foul ulcers, but they are bad for persons suffering from strangury.

CHAP. 37.—AMURCA OF OLIVES: TWENTY-ONE REMEDIES.

As to the amurca of olives, we might appear to have said enough on the subject already,[57] taking Cato as our guide; it remains, however, to speak of the medicinal uses of this substance. It is extremely serviceable as a strengthener of the gums,[58] and for the cure of ulcers of the mouth; it has the effect, also, of strengthening loose teeth in the sockets, and an application of it is good for erysipelas and spreading ulcers. For chilblains, the amurca of the black olive is the best, as also as a fomentation for infants; that of the white olive is used, with wool, as a pessary for affections of the uterus. Of both kinds, however, the amurca is much more serviceable when boiled; this being done in a vessel of Cyprian copper, to the consistency of honey. Thus prepared, it is used, according to the necessities of the case, with either vinegar, old wine, or honied wine, for the treatment of maladies of the mouth, teeth, and ears, and for running ulcers,[59] diseases of the generative organs, and chaps on various parts of the body. It is employed topically, for the cure of wounds, in a linen pledget, and for sprains, in wool: as a medicament, it is of great utility, more particularly when old, as in such case it effects the cure of fistula.[60]

It is used as an injection for ulcerations of the fundament, the generative organs, and the uterus, and is employed topically for incipient gout and diseases of the joints. Boiled

[56] Or preserved olives. See B. xv. c. 4.

[57] B. xv. c. 8.

[58] Fée thinks that it would exercise quite a contrary effect. Marc of olives is no longer used in medicine.

[59] It would produce no good effect in the treatment of ulcers.

[60] Fée remarks that it would have no such effect.

down again, with omphacium,[61] to the consistency of honey, it extracts decayed teeth; and, in combination with a decoction of lupines and the plant chamæleon,[62] it is a marvellous cure for itch in beasts of burden.[63] Fomentations of amurca in a raw state[64] are extremely good for gout.

CHAP. 38. (4.)—THE LEAVES OF THE WILD OLIVE: SIXTEEN REMEDIES.

The leaves of the wild olive are possessed of similar properties. The spodium[65] that is made by burning the young branches is of remarkable efficacy for arresting fluxes; it allays inflammations of the eyes also, acts as a detergent upon ulcerous sores, makes the flesh grow on wounds from which it has been removed, and acts gently as a caustic upon fleshy excrescences, drying them up and making them cicatrize. The rest of its properties are similar to those of the cultivated olive. There is, however, one peculiarity in it; the leaves, boiled with honey, are given in doses of a spoonful for spitting of blood.[66] The oil, too, of the wild olive is more acrid, and possesses greater energy than that of the cultivated olive; hence it is that it is usual to rinse the mouth with it for the purpose of strengthening the teeth.[67]

The leaves, too, are applied topically, with wine, to whitlows, carbuncles, and all kinds of gatherings; and, with honey, to sores which require a detergent. Both a decoction of the leaves and the natural juices of the wild olive form ingredients in medicaments for the eyes; and the latter are found useful as an injection for the ears, in the case of purulent discharges even. From the blossom of the wild olive a liniment is prepared for condylomata and epinyctis: it is applied also to the abdomen, with barley-meal, for fluxes, and to the head, with oil, for head-ache. In cases where the scalp becomes detached from the cranium, the young branches,

[61] See B. xii. c. 60.

[62] See B. xxii. c. 21.

[63] Fée thinks that it might prove useful in this case.

[64] Unboiled.

[65] See c. 35. There is no analogy, Fée says, between marc of olives and the leaves of the wild olive.

[66] This is hardly a peculiarity, for he has said already that the cultivated olive is employed with honey to arrest the flow of blood.

[67] The tannin which it contains in great abundance may possibly have this effect.

boiled and applied with honey, have a healing effect. These branches, too, when arrived at maturity, taken with the food, arrest diarrhœa: parched and beaten up with honey, they act as a detergent upon corroding sores, and bring carbuncles to a head and dispers them.

CHAP. 39.—OMPHACIUM: THREE REMEDIES.

As to olive oil, we have abundantly treated of its nature and elements already.[68] It now remains to speak of the medicinal properties of the various kinds of oil. The most useful of all is omphacium,[69] and next to that, green oil;[70] in addition to which, we may remark that oil ought to be as fresh as possible, except in cases where old oil is absolutely required. For medicinal purposes, too, oil should be extremely fluid, have an agreeable smell, and be free from[71] all taste, just the converse, in fact, of the property which we look for in food. Omphacium is good for the gums, and if kept from time to time in the mouth, there is nothing better as a preservative of the whiteness of the teeth. It checks profuse perspirations.

CHAP. 40.—OIL OF ŒNANTHE: TWENTY-EIGHT REMEDIES.

Oil of œnanthe[72] has just the same properties as oil of roses. Like oil in general, it makes the body supple, and imparts to it strength and vigour; it is injurious to the stomach, promotes the increase of ulcers, irritates the fauces, and deadens the effect of all poisons, white-lead and gypsum in particular, if taken in hydromel or a decoction of dried figs. Taken with water, it is good as an antidote to the effects of opium, and to injuries inflicted by cantharides, the buprestis, the salamandra, and the pine caterpillar.[73] Taken pure as an emetic, it is highly esteemed as an antidote in all the before-mentioned cases. It is also a refreshing remedy for extreme lassitude, and for fits of shivering from cold. Taken warm, in doses of six cyathi, and more particularly when boiled with rue,[73*] it

[68] In B. xv. c. 2.

[69] See B. xii. c. 60.

[70] See B. xii. c. 60. An inferior kind of omphacium.

[71] "Non mordeat." Probably in the sense of "have no pungency."

[72] Or "Œnanthinum." See B. xii. c. 61, and B. xv. c. 7.

[73] See c. 30 of this Book.

[73*] Fée remarks, that a modern physician would dread to administer such a dose, rue being a very dangerous plant in its effects. He also remarks that it is doubtful whether Pliny is speaking throughout this Chapter of olive oil or of oil of œnanthe; and such is the fact, though most probably the latter is intended to be spoken of.

relieves gripings of the stomach and expels intestinal worms. Taken in doses of one hemina with wine and warm water, or else with barley water,[74] it acts as a purgative upon the bowels. It is useful, also, in the composition of plasters for wounds, and it cleanses the complexion of the face. Injected into the nostrils of oxen, till it produces eructation, it cures attacks of flatulency.

When old it is of a more warming nature than when new, and acts more energetically as a sudorific, and as a resolvent for indurations. It is very efficacious[75] in cases of lethargy, and more particularly in the decline of the disease. Mixed with an equal proportion of honey which has not been smoked,[76] it contributes in some degree to the improvement of the sight. It is a remedy, also for head-ache; and, in combination with water, for the burning attacks in fevers. If old oil should happen not to be at hand, the new oil is boiled to act as a substitute for it.

CHAP. 41.—CASTOR OIL: SIXTEEN REMEDIES.

Castor[77] oil, taken with an equal quantity of warm water, acts as a purgative[78] upon the bowels. It is said, too, that as a purgative this oil acts more particularly upon the regions of the diaphragm.[79] It is very useful for diseases of the joints, all kinds of indurations, affections of the uterus and ears, and for burns: employed with the ashes of the murex,[80] it heals itch-scabs and inflammations of the fundament. It improves the complexion also, and by its fertilizing tendencies promotes the growth of the hair. The cicus, or seed from which this oil is made, no animal will touch; and from these grape-like seeds[81] wicks are made,[82] which burn with a peculiar brilliancy;

74 "Ptisanæ succo."

75 Fée thinks that it can have no such efficacy, whether it be olive oil or oil of œnanthe that is the subject of discussion.

76 "Acapni." See B. xi. c. 15.

77 "Oleum cicinum." See B. xv. c. 7.

78 It is still used in medicine for the same purpose.

79 "Præcordia;" either the diaphragm, or the parts above it, such as the heart and chest.

80 See B. ix. c. 52.

81 See B. xv. c. 7.

82 Fée is at a loss to know how these wicks could have been made: most probably, however, the seeds were beaten up into a pulp for the purpose. The oil is still used for lamps in some countries, though, as Pliny says, in consequence of its extreme thickness, the light it gives is not good.

the light, however, that is produced by the oil is very dim, in consequence of its extreme thickness. The leaves are applied topically with vinegar for erysipelas, and fresh-gathered, they are used by themselves for diseases of the mamillæ and defluxions; a decoction of them in wine, with polenta and saffron, is good for inflammations of various kinds. Boiled by themselves, and applied to the face for three successive days, they improve the complexion.

CHAP. 42.—OIL OF ALMONDS: SIXTEEN REMEDIES.

Oil of almonds is of a purgative and emollient nature; it effaces wrinkles on the skin, improves the complexion, and, in combination with honey, removes spots on the face. A decoction of it with oil of roses, honey, and pomegranate rind, is good for the ears, and exterminates the small worms that breed there; it has the effect also, of dispelling hardness of hearing, recurrent tinglings and singing in the ears, and is curative of head-ache and pains in the eyes. Used with wax, it cures boils, and scorches by exposure to the sun;[83] in combination with wine it heals running ulcers and scaly eruptions, and with melilote, condylomatous swellings. Applied by itself to the head, it invites sleep.[84]

CHAP. 43.—OIL OF LAUREL: NINE REMEDIES.

As to oil of laurel,[85] the fresher and greener it is, the more valuable are its properties. It is of a heating nature, and is consequently applied, warm, in a pomegranate rind, for paralysis, spasms, sciatica, bruises, head-ache, catarrhs of long standing, and diseases of the ears.

CHAP. 44.—OIL OF MYRTLE: TWENTY REMEDIES.

Oil of myrtle has similar properties.[86] It is of an astringent and indurative nature; mixed with the scoria of copper, and

[83] "A sole ustis." Not *coup de soleil*, or "sun-stroke," as Littré renders it. Oil of almonds is still a favourite ingredient in cosmetics.

[84] There is no truth, Fée says, in this assertion.

[85] Fixed oil of laurel contains a certain proportion of volatile oil, to which it is indebted for the excellence of its smell. It is still used as a liniment for rheumatic pains and other affections.

[86] As prepared by the ancients, it has no analogous properties with oil of laurel. Myrtle oil is no longer used in medicine.

wax, it cures diseases of the gums, tooth-ache, dysentery, ulcerations of the uterus, affections of the bladder, inveterate or running ulcers, eruptions, and burns. It exercises a healing effect also, upon excoriations, scaly eruptions, chaps, condylomata, and sprains, and it neutralizes offensive odours of the body. This oil is an antidote[87] to cantharides, the buprestis, and other dangerous poisons of a corrosive nature.

CHAP. 45.—OIL OF CHAMÆMYRSINE OR OXYMYRSINE; OIL OF CYPRESS; OIL OF CITRUS; OIL OF WALNUTS; OIL OF CNIDIUM; OIL OF MASTICH; OIL OF BALANUS; VARIOUS REMEDIES.

Oil of chamæmyrsine, or oxymyrsine,[88] possesses similar properties. Oil of cypress[89] also, produces the same effects as oil of myrtle, and the same as to oil of citrus.[90] Oil of walnuts, which we have previously mentioned[91] as being called "caryinon," is good for alopecy, and is injected into the ears for the cure of hardness of hearing. Used as a liniment, it relieves head-ache; but in other respects it is of an inert nature and disagreeable taste; indeed, if part only of one of the kernels should happen to be decayed, the whole making is spoilt. The oil extracted from the grain of Cnidos[92] has similar properties to castor[93] oil. Oil of mastich[94] is very useful as an ingredient in the medicinal preparation known as "acopum;"[95] indeed it would be fully as efficacious as oil of roses, were it not found to be somewhat too styptic in its effects. It is employed in cases of too profuse perspiration, and for the cure of pimples produced thereby. It is extremely efficacious also

87 Such is not the case.

88 The wild myrtle, or little holly. See B. xv. c. 7. The oil would be inodorous, and not possessed, as Pliny says, of properties similar to those of oil of myrtle.

89 See B. xv. c. 7. Fée thinks that it may have possibly been prepared from a decoction of leaves of cypress.

90 See B. xiii. cc. 1. 29, and B. xv. c. 7.

91 See B. xv. c. 7. Oil of walnuts is used but little in medicine at the present day, but it is employed for numerous other purposes.

92 "Granum Cnidium." See B. xv. c. 7.

93 It would only resemble castor oil in its drastic properties; the latter is a fixed natural oil, the former an artificial one.

94 See B. xv. c. 7. An oil is still extracted in Italy from the fruit of the Pistacia lentiscus; but it is no longer used in medicine.

95 From the Greek ἄκοπος, "relieving weariness."

for itch in beasts of burden. Oil of balanus[96] removes spots on the skin, boils, freckles, and maladies of the gums.[97]

CHAP. 46.—THE CYPRUS, AND THE OIL EXTRACTED FROM IT; SIXTEEN REMEDIES. GLEUCINUM: ONE REMEDY.

We have already enlarged[98] upon the nature of the cyprus, and the method of preparing oil of cyprus. This oil is naturally warming, and relaxes the sinews. The leaves of the tree are used as an application to the stomach,[99] and the juice of them is applied in a pessary for irritations of the uterus. Fresh gathered and chewed, the leaves are applied to running ulcers of the head, ulcerations of the mouth, gatherings, and condylomatous sores. A decoction of the leaves is very useful also for burns and sprains. Beaten up and applied with the juice of the strutheum,[1] they turn the hair red. The blossoms, applied to the head with vinegar, relieve head-ache, and the ashes of them, burnt in a pot of raw earth, are curative of corrosive sores and putrid ulcers, either employed by themselves, or in combination with honey. The odour[2] exhaled by these blossoms induces sleep.

The oil called "gleucinum"[3] has certain astringent and refreshing properties similar to those of oil of œnanthe.

CHAP. 47.—OIL OF BALSAMUM: FIFTEEN REMEDIES.

The oil of balsamum is by far the most valuable of them all, as already stated[4] by us, when treating of the unguents. It is extremely efficacious for the venom of all kinds of serpents,

[96] Or "ben." See B. xii c. 46, and B. xv. c. 7. Oil of ben is still made, but it has no such effects as those mentioned by our author.

[97] Pliny appears to have made the same error here in compiling from the Greek, as he has done in Chapters 4 and 13, in mistaking the Greek word signifying "scars," for that meaning "gums."

[98] In B. xii. c. 51, and B. xv. c. 7.

[99] The cyprus, or henna, is but little known in Europe: but it is employed for many purposes in the East. The leaves, which have a powerful smell, are used for the purpose of dyeing and staining various parts of the body.

[1] Pliny has most probably committed an error here in mentioning the "strutheum," or sparrow-quince; for the corresponding passage in Dioscorides, B. i. c. 124, speaks of the "struthion," the Gypsophila struthium of Linnæus, or possibly, as Littré thinks, the Saponaria officinalis. See B. xix. c. 18.

[2] This, Fée thinks, may probably be the case.

[3] See B. xv. c. 7.

[4] In B. xii. c. 54. Balm of Mecca, Fée says, possesses properties little different from the turpentines extracted from the Coniferæ.

is very beneficial to the eyesight, disperses films upon the eyes, assuages hardness of breathing, and acts emolliently upon all kinds of gatherings and indurations. It has the effect, also, of preventing the blood from coagulating, acts as a detergent upon ulcers, and is remarkably beneficial for diseases of the ears, head-ache, trembling,[5] spasms, and ruptures. Taken in milk, it is an antidote to the poison of aconite, and used as a liniment upon the access of the shivering fits in fevers, it modifies their violence. Still, however, it should be used but sparingly, as it is of a very caustic nature, and, if not employed in moderation, is apt to augment the malady.

CHAP. 48.—MALOBATHRUM: FIVE REMEDIES.

We have already[6] spoken, also, of the nature of malobathrum, and the various kinds of it. It acts as a diuretic, and, sprinkled in wine upon the eyes, it is used very advantageously for defluxions of those organs. It is applied also to the forehead, for the purpose of promoting sleep; but it acts with still greater efficacy, if the nostrils are rubbed with it, or if it is taken in water. The leaves, placed beneath the tongue, impart a sweetness to the mouth and breath, and put among clothes, they produce a similar effect.

CHAP. 49.—OIL OF HENBANE: TWO REMEDIES. OIL OF LUPINES: ONE REMEDY. OIL OF NARCISSUS: ONE REMEDY. OIL OF RADISHES: FIVE REMEDIES. OIL OF SESAME: THREE REMEDIES. OIL OF LILIES: THREE REMEDIES. OIL OF SELGA: ONE REMEDY. OIL OF IGUVIUM: ONE REMEDY.

Oil of henbane[7] is of an emollient nature, but it is bad for the nerves; taken in drink, it disturbs the brain. Therminum,[8] or oil of lupines, is emollient, and very similar to oil of roses in its effects. As to oil of narcissus, we have already[9] spoken of it when describing that flower. Oil of radishes[10]

[5] "Tremulis."

[6] In B. xii. c. 59. Whatever malobathrum may have been, this was an artificial oil, no doubt.

[7] "Hyoscyaminum." A fixed oil with narcotic properties, and most probably, highly dangerous in its effects.

[8] From the Greek θέρμος, a lupine.

[9] In B. xxi. c. 75.

[10] A fixed oil, charged with a small proportion of essential oil.

cures phthiriasis [11] contracted in a long illness, and removes roughness of the skin upon the face. Oil of sesame is curative of pains in the ears, spreading ulcers, and the cancer [12] known as "cacoethes." Oil of lilies, which we have previously [13] mentioned as being called oil of Phaselis and oil of Syria, is extremely good for the kidneys and for promoting perspiration, as also as an emollient for the uterus, and as tending to bring internal tumours to a head. As to oil of Selga, we have already [14] spoken of it as being strengthening to the tendons; which is the case, also, with the herbaceous [15] oil which the people of Iguvium [16] sell, on the Flaminian Way.

CHAP. 50.—ELÆOMELI: TWO REMEDIES. OIL OF PITCH: TWO REMEDIES.

Elæomeli, which, as we have already [17] stated, exudes from the olive-trees of Syria, has a flavour like that of honey, but not without a certain nauseous taste. It relaxes the bowels, and carries off the bilious secretions more particularly, if taken in doses of two cyathi, in a semisextarius of water. After drinking it, the patient falls into a torpor, and requires to be aroused every now and then. Persons, when about to drink for a wager, are in the habit of taking [18] a cyathus of it, by way of prelude. Oil of pitch [19] is employed for the cure of cough, and of itch in cattle.

CHAP. 51.—THE PALM: NINE REMEDIES.

Next in rank after the vine and the olive comes the palm. Dates fresh-gathered have an inebriating [20] effect, and are productive of head-ache; when dried, they are not so injurious. It would appear, too, that they are not wholesome to the stomach; they have an irritating [21] effect on coughs, but are very

[11] Fée is of opinion that applied to the body it would exterminate vermin.

[12] Malignant cancer. [13] In B. xxi. c. 11. [14] In B. xv. c. 7.

[15] Similar, probably, to the narcotic oil, or *baume tranquille* of the French.

[16] See B. xv. c. 7. [17] In B. xv. c. 7.

[18] Probably because its oleaginous properties would tend to prevent imbibition and absorption, while its narcotic qualities would in some degree neutralize the strength of the wine. Almonds have a somewhat similar effect.

[19] "Pissinum." See B. xv. c. 7. [20] This is not the fact.

[21] On the contrary, they are used at the present day as a pectoral; and many so-called pectoral sirops are prepared from them.

nourishing to the body. The ancients used to give a decoction of them to patients, as a substitute for hydromel, with the view of recruiting the strength and allaying thirst, the Thebaïc date being held in preference for the purpose. Dates are very useful, too, for persons troubled with spitting of blood, when taken in the food more particularly. The dates called caryotæ,[22] in combination with quinces, wax, and saffron, are applied topically for affections of the stomach, bladder, abdomen, and intestines: they are good for bruises also. Date-stones,[23] burnt in a new earthen vessel, produce an ash which, when rinsed, is employed as a substitute for spodium,[24] and is used as an ingredient in eye-salves, and, with the addition of nard, in washes for the eye-brows.[25]

CHAP. 52. (5.)—THE PALM WHICH PRODUCES MYROBALANUM: THREE REMEDIES.

Of the palm which produces myrobalanum,[26] the most esteemed kind is that grown in Egypt;[27] the dates of which, unlike those of the other kinds, are without stones. Used with astringent wine, they arrest[28] diarrhœa and the catamenia, and promote the cicatrization of wounds.

CHAP. 53.—THE PALM CALLED ELATE: SIXTEEN REMEDIES.

The palm called "elate,"[29] or "spathe," furnishes its buds, leaves, and bark for medicinal purposes. The leaves are applied to the thoracic regions, stomach, and liver, and to spreading ulcers, but they are adverse to cicatrization. The bark[30] of the tree, while tender, mixed with wax and resin, heals itch-scab in the course of twenty days: a decoction, also, is made of it

[22] See B. vi. c. 37, and B. xiii. c. 9.

[23] They have no properties, when burnt, to distinguish them from the ashes of other vegetables.

[24] Impure metallic oxide.

[25] "Calliblephara."

[26] See B. xii. cc. 46, 47.

[27] Fée is of opinion that this is not the "myrobalanum" of B. xii. c. 46, the behen or ben nut, but the phœnicobalanus of c. 47 in that Book; and, indeed, there can be little doubt that Pliny has committed an error here in substituting one for the other.

[28] "Ciet," "promote," is the reading adopted by Sillig, but "sistit" is supported by the parallel passage in Dioscorides.

[29] See B. xii. c. 62, and the Note, in reference to the mistake which Pliny appears to have committed in reference to this term.

[30] In reality, it is quite inert.

for diseases of the testes. Used as a fumigation, it turns the hair black, and brings away the fœtus. It is given in drink, also, for diseases of the kidneys, bladder, and thoracic organs; but it acts injuriously upon the head and nerves. The decoction of this bark has the effect, also, of arresting fluxes of the uterus and the bowels: the ashes of it are used with white wine for griping pains in the stomach, and form a very efficacious remedy for affections of the uterus.

CHAP. 54. (6.)—REMEDIES DERIVED FROM THE BLOSSOMS, LEAVES, FRUIT, BRANCHES, BARK, JUICES, WOOD, ROOTS, AND ASHES OF VARIOUS KINDS OF TREES. SIX OBSERVATIONS UPON APPLES. TWENTY-TWO OBSERVATIONS UPON QUINCES. ONE OBSERVATION UPON STRUTHEA.

We next come to the medicinal properties of the various kinds of apples. The spring fruits of this nature are sour and unwholesome[31] to the stomach, disturb the bowels, contract the bladder, and act injuriously upon the nerves; when cooked, however, they are of a more harmless nature. Quinces are more pleasant eating when cooked; still however, eaten raw, provided they are ripe, they are very useful[32] for spitting of blood, dysentery, cholera, and cœliac affections; indeed, they are not of the same efficacy when cooked, as they then lose the astringent properties which belong to their juice. They are applied also to the breast in the burning attacks of fever, and, in spite of what has been stated above, they are occasionally boiled in rain-water for the various purposes before-mentioned. For pains in the stomach they are applied[33] like a cerate, either raw or boiled. The down upon them heals[34] carbuncles.

Boiled in wine, and applied with wax, they restore the hair, when it has been lost by alopecy. A conserve of raw quinces in honey relaxes the bowels; and they add very materially to the sweetness of the honey, and render it more wholesome to the stomach. Boiled quinces preserved in honey are beaten up with a decoction of rose-leaves, and are taken as food by some

[31] In consequence of the malic and tartaric acid which they contain.

[32] Quinces are of an astringent nature; and an astringent sirop, Fée says, is still prepared from them.

[33] They are no longer used for this purpose.

[34] Fée observes that it has no such effect.

for the cure of affections of the stomach. The juice of raw quinces is very good, also, for the spleen, hardness of breathing, dropsy, affections of the mamillæ, condylomata, and varicose veins. The blossoms, either fresh or dried, are useful for inflammations of the eyes, spitting of blood, and irregularities of the catamenia. By beating them up with sweet wine, a soothing sirop is prepared, which is very beneficial for cœliac affections and diseases of the liver: with a decoction of them a fomentation is made for procidence of the uterus and intestines.

From quinces an oil is also extracted, which we have spoken of under the name of "melinum:"[35] in order to make it, the fruit must not have been grown in a damp soil; hence it is that the quinces which come from Sicily are so highly esteemed for the purpose; while, on the other hand, the strutheum,[36] though of a kindred kind, is not so good.

A circle[37] is traced round the root of this tree, and the root itself is then pulled up with the left hand, care being taken by the person who does so to state at the same moment the object for which it is so pulled up, and for whom. Worn as an amulet, this root is a cure for scrofula.

CHAP. 55.—THE SWEET APPLES CALLED MELIMELA: SIX OBSERVATIONS UPON THEM. SOUR APPLES: FOUR OBSERVATIONS UPON THEM.

The apples known as "melimela,"[38] and the other sweet apples, relax the stomach and bowels, but are productive of heat and thirst,[39] though they do not act injuriously upon the nervous system. The orbiculata[40] arrest diarrhœa and vomiting, and act as a diuretic. Wild apples resemble the sour apples of spring, and act astringently upon the bowels: indeed, for this purpose they should always be used before they are ripe.

[35] B. xiii. c. 2.

[36] Or "sparrow-quince." See B. xv. c. 10.

[37] He states this so gravely, that he would almost appear to believe it.

[38] "Honey apples." See B. xv. c. 15, where this apple is also called the "musteum."

[39] A purgative sirop of apples, causing thirst, was made by the ancients, the receipt for which was attributed to King Sapor.

[40] Or "round" apples. See B. xv. c. 15.

CHAP. 56.—CITRONS: FIVE OBSERVATIONS UPON THEM.

Citrons,[41] either the pulp of them or the pips, are taken in wine as an antidote to poisons. A decoction of citrons, or the juice extracted from them, is used as a gargle to impart sweetness to the breath.[42] The pips of this fruit are recommended for pregnant women to chew when affected with qualmishness. Citrons are good, also, for a weak stomach, but it is not easy to eat them except with vinegar.[43]

CHAP. 57.—PUNIC APPLES OR POMEGRANATES: TWENTY-SIX REMEDIES.

It would be a mere loss of time to recapitulate the nine[44] different varieties of the pomegranate. The sweet pomegranates, or, in other words, those known by the name of "apyrena,"[45] are generally considered to be injurious to the stomach; they are productive, also, of flatulency, and are bad for the teeth and gums. The kind which closely resembles the last in flavour, and which we have spoken of as the "vinous" pomegranate, has very diminutive pips, and is thought to be somewhat more wholesome than the others. They have an astringent effect upon the stomach and bowels, provided they are taken in moderation, and not to satiety; but even these, or, indeed, any other kind, should never be given in fevers, as neither the substance nor the juice of the fruit acts otherwise than injuriously under those circumstances. They should, also, be equally[46] abstained from in cases of vomiting and bilious evacuations.

In this fruit Nature has revealed to us a grape, and, so to say, not must, but a wine ready made, both grape and wine being enclosed in a tougher skin.[47] The rind of the sour pomegranate is employed for many purposes. It is in very

[41] See B. xii. c. 7.

[42] See B. xi. c. 15, and B. xii. c. 7.

[43] As Fée says, this observation is quite unaccountable. He queries whether a sweet fruit may not possibly be meant, the sweet lime, for instance, the flavour of which is very sickly, and would require to be heightened by the assistance of an acid.

[44] See B. xiii. c. 34; where, however, he has only distinguished them according to their flavour, sweet, vinous, &c.

[45] "Without pips." See B. xiii. c. 34.

[46] This and the previous precaution given, Fée considers to be mere puerilities.

[47] Than that of the ordinary grape, probably.

common use with curriers for tanning[48] leather, from which circumstance it has received the name of "malicorium."[49] Medical men assure us that the rind is diuretic, and that, boiled with nut-galls in vinegar, it strengthens loose teeth in the sockets. It is prescribed also for pregnant women when suffering from qualmishness, the flavour of it quickening the fœtus. A pomegranate is cut, and left to soak in rain-water for some three days; after which the infusion is given cold to persons suffering from cœliac affections and spitting of blood.

CHAP. 58.—THE COMPOSITION CALLED STOMATICE: FOURTEEN REMEDIES.

With the sour pomegranate a medicament is made, which is known as "stomatice," and is extremely good for affections of the mouth, nostrils, and ears, dimness of sight, films upon the eyes,[50] diseases of the generative organs, corrosive sores called "nomæ," and fleshy excrescences in ulcers; it is useful, also, as an antidote to the venom of the sea-hare.[51] The following is the method of making it: the rind is taken off the fruit, and the pips are pounded, after which the juice is boiled down to one-third, and then mixed with saffron, split alum,[52] myrrh, and Attic honey, the proportions being half a pound of each.

Some persons have another way of making it: a number of sour pomegranates are pounded, after which the juice is boiled down in a new cauldron to the consistency of honey. This composition is used for various affections of the generative organs and fundament, and, indeed, all those diseases which are treated with lycium.[53] It is employed, also, for the cure of purulent discharges from the ears, incipient defluxions of the eyes, and red spots upon the hands. Branches of the pomegranate have the effect of repelling the attacks of serpents.[54] Pomegranate rind, boiled in wine and applied, is a cure for chilblains. A pomegranate, boiled down to one-third in three heminæ of wine, is a cure for griping pains in

[48] See B. xiii. c. 34.

[49] The "leather apple," apparently. It is more probable, as Hardouin says, that it was so called from the toughness of the rind.

[50] "Pterygiis." [51] See B. ix. c. 72, and B. xxxii. c. 3.

[52] "Alumen scissum." See B. xxxi. c. 39, and B. xxxv. c. 52.

[53] See B. xii. c. 15, and B. xxiv. c. 77.

[54] An absurd notion, without any apparent foundation.

the bowels and for tape-worm.[55] A pomegranate, put in a new earthen pot tightly covered and burnt in a furnace, and then pounded and taken in wine, arrests looseness of the bowels, and dispels griping pains in the stomach.

CHAP. 59.—CYTINUS: EIGHT REMEDIES.

The Greeks have given the name of cytinus[56] to the first germs of this tree when it is just beginning to blossom. These germs have a singular property, which has been remarked by many. If a person, after taking off everything that is fastened upon the body, his girdle, for instance, shoes, and even his ring, plucks one of them with two fingers of the left hand, the thumb, namely, and the fourth finger, and, after rubbing it gently round his eyes, puts it into his mouth and swallows[57] it without letting it touch his teeth, he will experience, it is said, no malady of the eyes throughout all the year. These germs, dried and pounded, check the growth of fleshy excrescences; they are good also for the gums and teeth; and if the teeth are loose a decoction of the germs will strengthen them.

The young pomegranates[58] themselves are beaten up and applied as a liniment to spreading or putrid sores; they are used also for inflammations of the eyes and intestines, and nearly all the purposes for which pomegranate-rind is used. They are remedial also for the stings of scorpions.

CHAP. 60.—BALAUSTIUM: TWELVE REMEDIES.

We cannot sufficiently admire the care and diligence displayed by the ancients, who, in their enquiries into every subject, have left nothing untried. Within the cytinus, before the pomegranate itself makes its appearance, there are diminutive flowers, the name given to which, as already[59] stated,

[55] All vegetable productions rich in tannin are thought to possess the property of acting as a vermifuge.

[56] The calyx of the blossom of the pomegranate. Its properties are remarkably astringent.

[57] This would be nearly an impossibility, as the calyx is hard and coriaceous, and of considerable size. Nothing, however, is allowed to stand in the way of superstition.

[58] "Ipsa corpuscula." The *exact* meaning of this expression is somewhat doubtful: Hardouin takes it to be the lower part of the cytinus.

[59] In B. xiii. c. 34.

is "balaustium."[60] These blossoms, even, have not escaped their enquiries; it having been ascertained by them that they are an excellent remedy for stings inflicted by the scorpion. Taken in drink, they arrest the catamenia, and are curative of ulcers of the mouth, tonsillary glands, and uvula, as also of spitting of blood, derangement of the stomach and bowels, diseases of the generative organs, and running sores in all parts of the body.

The ancients also dried these blossoms, to try their efficacy in that state, and made the discovery that, pulverized, they cure patients suffering from dysentery when at the very point of death even, and that they arrest looseness of the bowels. They have not disdained, too, to make trial of the pips of the pomegranate: parched and then pounded, these pips are good for the stomach, sprinkled in the food or drink. To arrest looseness of the bowels, they are taken in rain-water. A decoction of the juices of the root, in doses of one victoriatus,[61] exterminates tape-worm;[62] and the root itself, boiled down in water to a thick consistency, is employed for the same purposes as lycium.[63]

CHAP. 61.—THE WILD POMEGRANATE.

There is a tree, also, which is called the wild pomegranate,[64] on account of its strong resemblance to the cultivated pomegranate. The roots of it have a red bark, which taken in wine in doses of one denarius, promotes sleep. The seed of

[60] The corolla of the flower. Dioscorides, B. i. c. 152, makes the "balaustium" to be the blossom of the wild pomegranate, and the "cytinus" to be that of the cultivated fruit. Theophrastus, however, and Galen, give the same account of the cytinus as Pliny. Holland has this quaint marginal Note on the passage: "Here is Pliny out of the way;" not improbably in reference to the statement of Dioscorides.

[61] Or Quinarius. See Introduction to Vol. III.

[62] These statements, Fée says, are quite unfounded.

[63] See B. xii. c. 15, and B. xxiv. c. 77.

[64] Fée thinks that there is no doubt that this was really the pomegranate, left to grow wild. Dalechamps and Fée suggest that, misled by the resemblance of the Greek names, Pliny has here attributed to the wild pomegranate the properties attributed to the red poppy, or corn poppy. Hardouin, however, is not of that opinion, and thinks that the mention of the *roots* of the plant proves that Pliny has not committed any error here; as in B. xx. c. 77, he has attributed the narcotic effects of the poppy to the head only.

it taken in drink is curative of dropsy. Gnats are kept at a distance by the smoke of burnt pomegranate rind.

CHAP. 62. (7.)—PEARS: TWELVE OBSERVATIONS UPON THEM.

All kinds of pears, as an aliment, are indigestible,[65] to persons in robust health, even; but to invalids they are forbidden as rigidly as wine. Boiled, however, they are remarkably agreeable and wholesome, those of Crustumium[66] in particular. All kinds of pears, too, boiled with honey, are wholesome to the stomach. Cataplasms of a resolvent nature are made with pears, and a decoction of them is used to disperse indurations. They are efficacious, also, in cases of poisoning[67] by mushrooms and fungi, as much by reason of their heaviness, as by the neutralizing effects of their juice.

The wild pear ripens but very slowly. Cut in slices and hung in the air to dry, it arrests looseness of the bowels, an effect which is equally produced by a decoction of it taken in drink; in which case the leaves also are boiled up together with the fruit. The ashes of pear-tree wood are even more efficacious[68] as an antidote to the poison of fungi.

A load of apples or pears, however small, is singularly fatiguing[69] to beasts of burden; the best plan to counteract this, they say, is to give the animals some to eat, or at least to shew them the fruit before starting.

CHAP. 63.—FIGS: ONE HUNDRED AND ELEVEN OBSERVATIONS UPON THEM.

The milky juice of the fig-tree possesses kindred properties with vinegar;[70] hence it is, that, like rennet, it curdles milk. This juice is collected before the fruit ripens, and dried in the shade; being used with yolk of egg as a liniment, or else in drink, with amylum,[71] to bring ulcers to a head and break

[65] This depends considerably, as Fée says, upon the kind of pear.

[66] See B. xv. c. 16.

[67] There is no truth whatever in this statement.

[68] They are equally inefficacious for the purpose.

[69] See B. xxiv. c. 1. An absurdity, upon which Fée has uselessly expended a dozen lines of indignation.

[70] In reality it has no affinity with vinegar or any other acid, and the fact that it curdles milk is no proof whatever that such is the case.

[71] See B. xviii. c. 17.

them, and for the purposes of an emmenagogue. With meal of fenugreek and vinegar, it is applied topically for gout; it acts also as a depilatory,[72] heals eruptions of the eyelids, lichens and itch-scabs, and relaxes the bowels. The milk of the fig-tree is naturally curative of the stings of hornets, wasps, and similar insects, and is remarkably useful for wounds inflicted by scorpions. Mixed with axle-grease it removes warts. With the leaves and figs still green an application is made for scrofulous[73] and other sores of a nature which requires emollients or resolvents. The leaves, too, used by themselves, are productive of a similar effect. In addition to this, they are employed for other purposes, as a friction for lichens, for example, for alopecy, and other diseases which require caustic applications. The young shoots of the branches are used as an application to the skin in cases of bites inflicted by dogs. With honey they are applied to the ulcers known as honey-comb ulcers;[74] mixed with the leaves of wild poppies they extract[75] splinters of bones; and the leaves beaten up in vinegar are a cure for bites inflicted by dogs. The young white shoots of the black[76] fig are applied topically, with wax, to boils, and bites inflicted by the shrew-mouse: and the ashes of their leaves are used for the cure of gangrenes and the reduction of fleshy excrescences.

Ripe figs are diuretic and laxative; they promote the perspiration, and bring out pimples; hence it is that they are unwholesome in autumn, the perspirations which they excite being always attended with shivering. They are injurious also to the stomach, though for a short time only; and it is generally thought that they spoil the voice. The figs which are the last to ripen are more wholesome than the first, but those which are drugged[77] for the purpose of ripening them are never wholesome. This fruit invigorates the young, and improves the health of the aged and retards the formation of wrinkles; it allays thirst, and is of a cooling nature, for

[72] Being of a caustic nature, it might have this effect, Fée thinks. It is, however, no longer employed in medicine. He is also of opinion that the juice of the fig-tree might be useful in making cheese.

[73] Here, also, the caustic nature of their juices might render them useful.

[74] "Ceria:" now known in surgery as "favus."

[75] This and the next statement are equally untrue.

[76] See B. xv. c. 19.

[77] "Medicatæ." See B. xvi. c. 51.

which reason it should never be declined in those fevers of an astringent tendency which are known as "stegnæ."

Dried figs are injurious to the stomach,[78] but are beneficial in a marvellous degree to the throat and fauces. They are of a warming nature, are productive of thirst, and relax the bowels, but are unwholesome in stomachic complaints and fluxes of the bowels. In all cases they are beneficial for the bladder, hardness of breathing, and asthma, as also for diseases of the liver, kidneys, and spleen. They are nourishing and invigorating, for which reason, the athletes in former times used them as food: Pythagoras, the gymnast, being the first who introduced among them a flesh diet.[79] Figs are extremely useful for patients recovering from a long illness, and for persons suffering from epilepsy or dropsy. They are applied topically also in all cases where sores require to be brought to a head, or dispersed; and they are still more efficacious when mixed with lime or nitre. Boiled with hyssop they act as a purgative on the pectoral organs, carry off the phlegm, and cure inveterate coughs: boiled with wine they heal maladies of the fundament, and tumours of the jaws. A decoction of them is applied also to boils, inflamed tumours, and imposthumes of the parotid glands. This decoction, too, is found very useful as a fomentation for disorders incident to females.

Boiled with fenugreek,[80] figs are very useful in cases of pleurisy and peripneumony. A decoction of them with rue is good for griping pains in the bowels; in combination with verdigris,[81] they are used for ulcers of the legs and imposthumes of the parotid glands; with pomegranates, for hangnails;[82] and with wax, for burns and chilblains. Boiled in wine, with wormwood and barley-meal, they are employed for dropsy. Eaten with nitre, they relax the bowels; and beaten up with salt they are applied to stings inflicted by scorpions. Boiled in wine, and applied topically, they bring carbuncles to a head. In cases of carcinoma, unattended with ulceration, it is a singularly good plan to apply to the part the

[78] They produce heart-burn and flatulency.

[79] "Ad carnes eos transtulit." Dalechamps takes this to mean "showed them that the flesh was increased by eating figs." This Pythagoras was probably the Samian pugilist who gained a victory in Ol. 48.

[80] This herb is rich in mucilage, and of a soothing nature.

[81] "Æris flore."

[82] "Pterygiis."

pulpiest fig that can be procured; the same, too, with phagedænic sores.

As to the ashes of the fig, those of no tree known are of a more acrid character,[83] being of a detergent and astringent nature, and tending to make new flesh and to promote the cicatrization of wounds. They are also taken in drink, for the purpose of dissolving coagulated blood, as also for bruises, falls with violence, ruptures, convulsions * * * * in one cyathus respectively of water and oil. They are administered also for tetanus and spasms, and are used either in a potion, or as an injection for cœliac affections and dysentery. Employed as a liniment with oil, they have a warming effect; and kneaded into a paste with wax and rose-oil, they heal burns, leaving the slightest scar only. Applied in oil, as a liniment, they are a cure for weakness of sight, and are used as a dentifrice in diseases of the teeth.

It is said, too, that if a patient draws downward a branch of a fig-tree, and turns up his head and bites off some knot or other of it, without being seen by any one, and then wears it in a leather bag suspended by a string from his neck, it is a certain cure for scrofulous sores and imposthumes of the parotid glands. The bark of this tree, beaten up with oil, cures ulcerations of the abdomen. Green figs, applied raw, with the addition of nitre and meal, remove warts and wens.[84]

The ashes of the suckers which spring from the roots are used as a substitute for spodium.[85] Burnt over a second time and incorporated with white lead, they are divided into cakes which are used for the cure of ulcerations of the eyes and eruptions.

CHAP. 64.—THE WILD FIG: FORTY-TWO OBSERVATIONS UPON IT.

The wild fig, again, is even more efficacious in its properties than the cultivated one. It has not so large a proportion of milky juice as the other: a slip of it put into milk has the effect of curdling it and turning it into cheese. This juice, collected and indurated by being subjected to pressure, im-

[83] This is the case, as they are remarkably rich in alkaline salts. The assertion, however, as to their properties, is, as Fée says, hypothetical.

[84] "Thymos."

[85] Metallic ashes, or dross. See B. xxxiv. c. 52.

parts a fine flavour [86] to meat, being steeped in vinegar for the purpose, and then rubbed upon it. It is used also as an ingredient in blisters, and taken internally it relaxes the bowels. Used with amylum,[87] it opens the passages of the uterus, and combined with the yolk of an egg it acts as an emmenagogue. Mixed with meal of fenugreek it is applied topically for gout, and is used for the dispersion of leprous sores, itch-scabs, lichens, and freckles: it is an antidote also to the stings of venomous animals, and to the bites of dogs. Applied to the teeth in wool, or introduced into the cavity of a carious tooth, this juice cures tooth-ache.[88] The young shoots and the leaves, mixed with meal of fitches, act as an antidote to the poison of marine animals, wine being added to the preparation. In boiling beef a great saving of fire-wood may be effected, by putting some of these shoots in the pot.[89]

The figs in a green state, applied topically, soften and disperse scrofulous sores and all kinds of gatherings, and the leaves, to a certain extent, have a similar effect. The softer leaves are applied with vinegar for the cure of running ulcers, epinyctis, and scaly eruptions. With the leaves, mixed with honey, honeycomb ulcers [90] are treated, and wounds inflicted by dogs; the leaves are applied, too, fresh, with wine, to phagedænic sores. In combination with poppy-leaves, they extract splintered bones. Wild figs, in a green state, employed as a fumigation, dispel flatulency; and an infusion of them, used as a potion, combats the deleterious effects of bullocks' blood, white-lead, and coagulated milk, taken internally. Boiled in water, and employed as a cataplasm, they cure imposthumes of the parotid glands. The shoots, or the green figs, gathered as young as possible, are taken in wine for stings inflicted by scorpions. The milky juice is also poured into the wound, and the leaves are applied to it: the bite of the shrew-mouse is treated in a similar manner. The ashes of the young branches are curative of relaxations of the uvula; and the ashes of the tree itself, mixed with honey, have the effect of healing chaps. A de-

[86] "Suavitatem." Fée is justly at a loss to understand how this could be. It is doubtful whether Pliny does not mean that by the use of this substance meat was *kept fresh*.

[87] See B. xviii. c. 17.

[88] Fée thinks that, owing to its acridity, it may possibly have this effect.

[89] There is probably no foundation for this statement.

[90] Favus.

coction of the root, boiled in wine, is good for tooth-ache. The winter wild fig, boiled in vinegar and pounded, is a cure for impetigo: the branches are first barked for the purpose and then scraped; these scrapings, which are as fine as saw-dust, being applied topically to the parts affected.

There is also one medicinal property of a marvellous nature attributed to the wild fig: if a youth who has not arrived at puberty breaks off a branch, and then with his teeth tears off the bark swelling with the sap, the pith of this branch, we are assured, attached as an amulet to the person before sunrise, will prevent the formation of scrofulous sores. A branch of this tree, attached to the neck of a bull, however furious, exercises such a marvellous effect upon him as to restrain his ferocity,[91] and render him quite immoveable.

CHAP. 65.—THE HERB ERINEON: THREE REMEDIES.

It will be as well to speak here, in consequence of the similarity of name,[92] of the herb which is known to the Greeks as the "erineon." This plant[93] is a palm in height, and has mostly five small stems: in appearance it resembles ocimum, and bears a white flower, with a small, black, seed. Beaten up with Attic honey, it is a cure for defluxions of the eyes. In whatever way it is gathered, it yields a considerable abundance of sweet, milky, juice. With the addition of a little nitre, this plant is extremely useful for pains in the ears. The leaves of it have the property of neutralizing poisons.

CHAP. 66.—PLUMS: FOUR OBSERVATIONS UPON THEM.

The leaves[94] of the plum, boiled in wine, are useful for the tonsillary glands, the gums, and the uvula, the mouth being rinsed with the decoction every now and then. As for the fruit itself, it is relaxing[95] to the bowels; but it is not very

[91] Plutarch, Sympos. ii. 7, tells the same absurd story.

[92] To "erineon," the Greek for wild fig.

[93] Supposed to be the Campanula rapunculus of Linnæus, the rampion; though Fée expresses some doubts. Guilandin has suggested the Hieracium Sabaudum of Linnæus, an opinion which Fée thinks not altogether destitute of probability.

[94] The leaves of this tree contain a large proportion of tannin, to which they owe their astringent properties.

[95] Prunes, the produce of the plum-tree, called the plum of Saint Julien, are still used as a purgative.

wholesome to the stomach, though its bad effects are little more than momentary.

CHAP. 67.—PEACHES: TWO REMEDIES.

Peaches, again, are more wholesome than plums; and the same is the case with the juice of the fruit, extracted, and taken in either wine or vinegar. Indeed, what known fruit is there that is more wholesome as an aliment than this? There is none, in fact, that has a less powerful smell,[96] or a greater abundance of juice, though it has a tendency to create thirst.[97] The leaves of it, beaten up and applied topically, arrest hæmorrhage: the kernels, mixed with oil and vinegar, are used as a liniment for head-ache.[98]

CHAP. 68.—WILD PLUMS: TWO REMEDIES.

The fruit of the wild plum, or the bark of the root,[99] boiled down to one-third in one hemina of astringent wine, arrests looseness of the bowels and griping pains in the stomach: the proper dose of the decoction is one cyathus.

CHAP. 69.—THE LICHEN ON PLUM-TREES: TWO REMEDIES.

Upon the bark of the wild and cultivated plums we find an excrescence[1] growing, known to the Greeks by the name of "lichen:" it is remarkably good for chaps and condylomatous swellings.

CHAP. 70.—MULBERRIES: THIRTY-NINE REMEDIES.

In Egypt and in the Isle of Cyprus there are, as already

[96] A most singular assertion, as Fée says, and one that universal experience proves to be unfounded.

[97] On the contrary, it quenches thirst.

[98] Fée thinks that, owing to the hydro-cyanic acid which the kernels contain, there may possibly be some foundation for this statement of their curative effects.

[99] Both the root and the fruit are of an astringent nature. From this fruit an extract is prepared, Fée says, rich in tannin, and called in France Acacia nostras, from its resemblance to the juice of the Egyptian Acacia.

[1] "Limus." Fée thinks that this may possibly be the Evernia prunastri of modern botany. It has been suggested, however, that Pliny has committed an error here, and that in copying from the Greek source he has mistaken the author's mention of the cure of lichens by the gum of the plum-tree, for an account of a lichen which grows on the tree. Such, in fact, is the statement of Dioscorides in B. i. c. 174, though he does not mention chaps and condylomata.

stated,[2] mulberry-trees of a peculiar kind, being of a nature that is truly marvellous; for, if the outer bark is peeled off, they emit a great abundance of juice; but if a deeper incision is made, they are found to be quite dry.[3] This juice is an antidote to the venom of serpents, is good for dysentery, disperses inflamed tumours and all kinds of gatherings, heals wounds, and allays both head-ache and ear-ache: it is taken in drink for affections of the spleen, and is used as a liniment for the same purpose, as also for fits of shivering. This juice, however, very soon breeds worms.

Among ourselves, too, the juice which exudes from the mulberry-tree is employed for an equal number of purposes: taken in wine, it neutralizes the noxious effects of aconite[4] and the venom of spiders, relaxes the bowels, and expels tape-worm and other animals which breed in the intestines;[5] the bark of the tree, pounded, has also a similar effect. The leaves, boiled in rain-water with the bark of the black fig and the vine, are used for dyeing the hair.

The juice of the fruit has a laxative effect immediately upon the bowels, though the fruit itself, for the moment, acts beneficially upon the stomach, being of a refreshing nature, but productive of thirst. If no other food is taken upon them, mulberries[6] are of a swelling tendency. The juice of unripe mulberries acts astringently upon the bowels. The marvels which are presented by this tree, and of which we have made some mention[7] when describing it, would almost appear to belong to a creature gifted with animation.

CHAP. 71.—THE MEDICAMENT CALLED STOMATICE, ARTERIACE, OR PANCHRESTOS. FOUR REMEDIES.

From the fruit of the mulberry a medicament is prepared, called "panchrestos,"[8] "stomatice," or "arteriace:" the following is the method employed. Three sextarii of the juice

[2] In B. xiii. cc. 14, 15, where he calls it a fig-tree. He alludes to the sycamore. [3] See B. xvi. c. 72.

[4] This statement is entirely unfounded.

[5] Considering that the leaves and bark are rich in tannin and gallic acid, it might be worth while to ascertain if there is any truth in this assertion.

[6] But Horace says, Sat. B. ii. s. 4, l. 22, that mulberries are remarkably wholesome as a dessert. [7] In B. xvi. c. 41.

[8] "All-healing," "mouth-medicine," and "medicine for the trachea."

are reduced, at a slow heat, to the consistency of honey; two denarii of dried omphacium[9] or one of myrrh, with one denarius of saffron, are then added, the whole being beaten up together and mixed with the decoction. There is no medicament known that is more soothing than this, for affections of the mouth, the trachea, the uvula, and the stomach. There is also another mode of preparing it: two sextarii of mulberry juice and one of Attic honey are boiled down in the manner above stated.

There are some other marvellous properties, also, which are mentioned in reference to this tree. When the tree is in bud, and before the appearance of the leaves, the germs of the fruit must be gathered with the left hand—the Greeks give them the name of "ricini."[10] These germs, worn as an amulet before they have touched the ground, have the effect of arresting hæmorrhage, whether proceeding from a wound, from the mouth, from the nostrils, or from piles; for which purposes they are, accordingly, put away and kept. Similar virtues are attributed to a branch just beginning to bear, broken off at full moon, provided also it has not touched the ground: this branch, it is said, attached to the arm, is peculiarly efficacious for the suppression of the catamenia when in excess. The same effect is produced, it is said, when the woman herself pulls it off, whatever time it may happen to be, care being taken not to let it touch the ground, and to wear it attached to the body. The leaves of the mulberry-tree beaten up fresh, or a decoction of them dried, are applied topically for stings inflicted by serpents: an infusion of them, taken in drink, is equally efficacious for that purpose. The juice extracted from the bark of the root, taken in wine or oxycrate, counteracts the venom of the scorpion.

We must also give some account of the method of preparing this medicament employed by the ancients: extracting the juice from the fruit, both ripe and unripe, they mixed it together, and then boiled it down in a copper vessel to the con-

[9] See B. xii. c. 60. A rob, or sirop of mulberries is prepared for much the same purposes at the present day, but without the omphacium, myrrh, or saffron. An "arteriace" is also mentioned in B. xx. c. 79.

[10] Hermolaüs Barbarus is possibly right in suggesting "cytini," which name has been previously mentioned in connection with the calyx of the pomegranate.

sistency of honey. Some persons were in the habit of adding myrrh and cypress, and then left it to harden in the sun, mixing it with a spatula three times a-day. Such was their receipt for the stomatice, which was also employed by them to promote the cicatrization of wounds. There was another method, also, of dealing with the juice of this fruit: extracting the juice, they used the dried fruit with various articles of food,[11] as tending to heighten the flavour; and they were in the habit of employing it medicinally[12] for corroding ulcers, pituitous expectorations, and all cases in which astringents were required for the viscera. They used it also for the purpose of cleaning[13] the teeth. A third mode of employing the juices of this tree is to boil down the leaves and root, the decoction being used, with oil,[13*] as a liniment for the cure of burns. The leaves are also applied by themselves for the same purpose.

An incision made in the root at harvest-time, supplies a juice that is extremely useful for tooth-ache, gatherings, and suppurations; it acts, also, as a purgative upon the bowels. Mulberry-leaves, macerated in urine, remove the hair from hides.

CHAP. 72.—CHERRIES: FIVE OBSERVATIONS UPON THEM.

Cherries are relaxing to the bowels and unwholesome[14] to the stomach; in a dried state, however, they are astringent and diuretic.[15] I find it stated by some authors, that if cherries are taken early in the morning covered with dew, the kernels being eaten with them, the bowels will be so strongly acted upon as to effect a cure for gout in the feet.

[11] From the account given by Dioscorides, B. i. c. 181, this appears to be the meaning of the passage, which is very elliptically expressed, if, indeed, it is not imperfect.

[12] In a powdered state, probably, as mentioned by Dioscorides.

[13] The use of the word "conluebant" would almost make it appear that he is speaking of a liquid.

[13*] The juice (if, indeed, Pliny intends to specify it as an ingredient) will not, as Fée remarks, combine with oil. Dioscorides says, B. i. c. 180, that the *leaves* are bruised and applied with oil to burns.

[14] Black cherries, Fée says, bigaroons, and others, with a firm flesh, are the most unwholesome. See B. xv. c. 30.

[15] This property, Fée says, is attributed by some, in modern times, not to the flesh, or pericarpus of the cherry, but to the stalks of the fruit.

CHAP. 73.—MEDLARS: TWO REMEDIES. SORBS: TWO REMEDIES.

Medlars, the setania[16] excepted, which has pretty nearly the same properties as the apple, act astringently upon the stomach and arrest looseness of the bowels. The same is the case, too, with dried sorbs;[17] but when eaten fresh, they are beneficial to the stomach, and are good for fluxes of the bowels.

CHAP. 74. (8.)—PINE-NUTS: THIRTEEN REMEDIES.

Pine-nuts,[18] with the resin in them, are slightly bruised, and then boiled down in water to one-half, the proportion of water being one sextarius to each nut. This decoction, taken in doses of two cyathi, is used for the cure of spitting of blood. The bark of the tree, boiled in wine, is given for griping pains in the bowels. The kernels of the pine-nut allay thirst, and assuage acridities and gnawing pains in the stomach; they tend also to neutralize vicious humours in that region, recruit the strength, and are salutary to the kidneys and the bladder. They would seem, however, to exercise an irritating effect[19] upon the fauces, and to increase cough. Taken in water, wine, raisin wine, or a decoction of dates, they carry off bile. For gnawing pains in the stomach of extreme violence, they are mixed with cucumber-seed and juice of purslain; they are employed, too, in a similar manner for ulcerations of the bladder and kidneys,[20] having a diuretic effect.

CHAP. 75.—ALMONDS: TWENTY-NINE REMEDIES.

A decoction of the root of the bitter almond[21] clears the complexion, and gives the face a brighter colour.[22] Bitter almonds are provocative of sleep,[23] and sharpen the appetite;

[16] See B. XV. c. 22.

[17] See B. XV. c. 23.

[18] They are no longer used in medicine, Fée says, but the buds of the pine and fir, the properties of which are analogous, are still used, though not in cases of hæmoptysis.

[19] In a rancid state particularly, they would have this effect.

[20] Fée thinks that the mixture might be useful in these cases.

[21] See B. XV. c. 24.

[22] "Hilariorem." At the present day it is not a decoction of the root, but the fixed oil of the kernels, that is used as a cosmetic; for which purpose it is used with oil of sweet almonds and wax.

[23] Their narcotic effect is owing to the prussic, or hydro-cyanic, acid which they contain.

they act, also, as a diuretic and as an emmenagogue. They are used topically for head-ache, when there is fever more particularly. Should the head-ache proceed from inebriation,[24] they are applied with vinegar, rose-oil, and one sextarius of water. Used in combination with amylum[25] and mint, they arrest hæmorrhage. They are useful, also, for lethargy and epilepsy, and the head is anointed with them for the cure of epinyctis. In combination with wine, they heal putrid ulcers of an inveterate nature, and, with honey, bites inflicted by dogs.[26] They are employed, also, for the cure of scaly eruptions of the face, the parts affected being fomented first.

Taken in water, or, as is often done, in an electuary, with resin of terebinth,[27] they remove pains in the liver and kidneys; used with raisin wine, they are good for calculus and strangury. Bruised in hydromel, they are useful for cleansing the skin; and taken in an electuary with the addition of a small proportion of elelisphacus,[28] they are good for diseases of the liver, cough, and colic, a piece about the size of a hazel-nut being taken in honey. It is said that if five bitter almonds are taken by a person before sitting down to drink, he will be proof against inebriation;[29] and that foxes, if they eat bitter almonds,[30] will be sure to die immediately, if they cannot find water to lap.

As to sweet almonds, their remedial properties are not[31] so extensive; still, however, they are of a purgative nature, and are diuretic. Eaten fresh, they are difficult[32] of digestion.

CHAP. 76.—GREEK NUTS: ONE REMEDY.

Greek nuts,[33] taken in vinegar with wormwood seed, are said

[24] Almonds were a favourite food with the monks in the middle ages; not improbably because they tended to dispel the fumes of wine. Almond milk, similar to our custard, was a standing dish at their "charities" and anniversaries.

[25] See B. xviii. c. 17.

[26] They would be of no use whatever in these cases.

[27] Otherwise turpentine.

[28] See B. xxii. c. 71.

[29] See Note [24] above. Plutarch tells us that Drusus, the brother of Tiberius, one of the greatest drinkers of his time, used almonds for this purpose. Fée will not believe that they have any such preventive effect.

[30] Almonds will kill small animals, birds, for instance.

[31] They are much more used in modern medicine than bitter almonds.

[32] There is some ground, Fée says, for this assertion.

[33] See B. xv. c. 24, where Pliny expresses himself at a loss as to their identification.

to be a cure for jaundice. Used alone, they are employed topically for the treatment of diseases of the fundament, and condylomata in particular, as also cough and spitting of blood.

CHAP. 77.—WALNUTS: TWENTY-FOUR REMEDIES. THE MITHRIDATIC ANTIDOTE.

Walnuts[34] have received their name in Greek from being oppressive[35] to the head; for, in fact, the emanations[36] from the tree itself and the leaves penetrate to the brain. The kernels, also, have a similar effect when eaten, though not in so marked a degree. When fresh gathered, they are most agreeable eating; for when dry, they are more oleaginous, unwholesome to the stomach, difficult of digestion, productive of head-ache, and bad for cough,[37] or for a person when about to take an emetic fasting: they are good in cases of tenesmus only, as they carry off the pituitous humours of the body. Eaten beforehand, they deaden the effects of poison, and, employed with rue and oil, they are a cure for quinsy. They act as a corrective, also, to onions, and modify their flavour. They are applied to inflammations of the ears, with a little honey, and with rue they are used for affections of the mamillæ, and for sprains. With onions, salt, and honey, they are applied to bites inflicted by dogs or human beings. Walnut-shells are used for cauterizing[38] carious teeth; and with these shells, burnt and then beaten up in oil or wine, the heads of infants are anointed, they having a tendency to make the hair grow; hence they are used in a similar manner for alopecy also. These nuts, eaten in considerable numbers, act as an expellent upon tape-worm.[39] Walnuts, when very old, are[40] curative of gangrenous sores and carbuncles, of bruises also. Green walnut-shells[41]

[34] See B. xv. c. 24.

[35] Κάρυα, from κάρος, "heaviness," or κάρη, the "head." See Vol. III. p. 316.

[36] A mere prejudice, no doubt.

[37] The rancidity of the oil which they contain, renders them irritating to the throat and stomach.

[38] Fée remarks, that it is difficult to see how this could be done.

[39] This statement, as Fée remarks, is quite unfounded.

[40] This assertion is also entirely imaginary.

[41] "Cortex juglandium." Fée says that by this term is meant, not the green outer shell, husk, or pericarpus of the walnut, but the bark of the tree.

are employed for the cure of lichens and dysentery, and the leaves are beaten up with vinegar as an application for ear-ache.[42]

After the defeat of that mighty monarch, Mithridates, Cneius Pompeius found in his private cabinet a recipe for an antidote in his own hand-writing; it was to the following effect:[43]—Take two dried walnuts, two figs, and twenty leaves of rue; pound them all together, with the addition of a grain of salt; if a person takes this mixture fasting, he will be proof against all poisons for that day.[44] Walnut kernels, chewed by a man fasting, and applied to the wound, effect an instantaneous cure, it is said, of bites inflicted by a mad dog.

CHAP. 78.—HAZEL-NUTS: THREE OBSERVATIONS UPON THEM. PISTACHIO-NUTS: EIGHT OBSERVATIONS UPON THEM. CHESNUTS: FIVE OBSERVATIONS UPON THEM.

Hazel-nuts[45] are productive of head-ache, and flatulency of the stomach; they contribute, however, to the increase of flesh more than would be imagined. Parched, they are remedial for catarrhs, and beaten up and taken with hydromel,[46] they are good for an inveterate cough. Some persons add grains of pepper,[47] and others take them in raisin wine.

Pistachio-nuts[48] have the same properties, and are productive of the same effects, as pine-nuts; in addition to which, they are used as an antidote to the venom[49] of serpents, eaten or taken in drink.

[42] This asserted use of them has not been verified by modern experience.

[43] The various receipts for the preparation of this Mithridate or antidote differ very widely; and, indeed, the probability is, as Dr. Heberden says, that Mithridates was as much a stranger to his own antidote, as modern physicians have since been to the medicines daily advertised under their names. Mithridates is said to have so fortified himself against all noxious drugs and poisons, that none would produce any effect when he attempted to destroy himself—a mere fable, no doubt.

[44] This, we are told by Galen, was regularly done by the Emperor Marcus Aurelius, De Antid. B. i. c. i.

[45] See B. xv. c. 24.

[46] An emulsion of them fresh, with honey, might be useful, Fée thinks, in such a case.

[47] Either of these additions would certainly neutralize the good effects of the emulsion. The addition of raisin wine, however, is recommended by Dioscorides.

[48] See B. xiii. c. 10.

[49] They are of no efficacy whatever for such a purpose.

Chesnuts [50] have a powerful effect in arresting fluxes of the stomach and intestines, are relaxing to the bowels, are beneficial in cases of spitting of blood, and have a tendency to make flesh.[51]

CHAP. 79.—CAROBS: FIVE OBSERVATIONS UPON THEM. THE CORNEL; ONE REMEDY. THE FRUIT OF THE ARBUTUS.

Fresh carobs[52] are unwholesome to the stomach, and relaxing to the bowels;[53] in a dried state, however, they are astringent, and are much more beneficial to the stomach; they are diuretic also. For pains in the stomach, persons boil three Syrian carobs[54] with one sextarius of water, down to one-half, and drink the decoction.

The juices which exude from the branches of the cornel[55] are received on a plate of red-hot iron[56] without it touching the wood; the rust of which is applied for the cure of incipient lichens. The arbutus or unedo[57] bears a fruit that is difficult of digestion, and injurious to the stomach.

CHAP. 80.—THE LAUREL; SIXTY-NINE OBSERVATIONS UPON IT.

All parts of the laurel, both the leaves, bark, and berries, are of a warming[58] nature; and a decoction of them, the leaves in particular, is very useful for affections of the bladder and uterus.[59] The leaves, applied topically, neutralize the poison of wasps, bees, and hornets, as also that of serpents, the seps,[60] dipsas,[61] and viper, in particular. Boiled in oil,

[50] See B. xv. c. 25. They are no longer used in medicine, and, as Fée says, it is extremely doubtful if they possess any of the properties here attributed to them.

[51] They are still looked upon as very nourishing, as, indeed, is the case with all the feculent fruits.

[52] See B. xv. c. 26.

[53] They are productive of colic and diarrhœa.

[54] See B. xiii. c. 16.

[55] See B. xv. c. 31.

[56] The juice of the sap would, to all appearance, produce an acetate or oxide of iron.

[57] See B. xv. c. 28.

[58] All parts of the laurel, the berries in particular, are impregnated with an essential oil with a powerful odour and of an exciting nature. Upon this volatile principle, and nothing else, the whole of its medicinal properties are based.

[59] This assertion, Fée says, is no better than fabulous.

[60] See Lucan's Pharsalia, B. ix. ll. 723, 776.

[61] See the Pharsalia, B. ix. l. 719.

they promote the catamenia; and the more tender of the leaves beaten up with polenta, are used for inflammations of the eyes, with rue for inflammations of the testes, and with rose-oil, or oil of iris,[62] for head-ache. Three leaves, chewed and swallowed for three days in succession, are a cure for cough, and beaten up with honey, for asthma. The bark of the root is dangerous to pregnant women; the root itself disperses calculi, and taken in doses of three oboli in aromatic wine, it acts beneficially on the liver. The leaves, taken in drink, act as an emetic;[63] and the berries, pounded and applied as a pessary, or else taken in drink, promote menstruation. Two of the berries with the skin removed, taken in wine, are a cure for inveterate cough and hardness of breathing; if, however, this is accompanied with fever, they are given in water, or else in an electuary with raisin wine, or boiled in hydromel. Employed in a similar manner, they are good for phthisis, and for all defluxions of the chest, as they have the effect of detaching the phlegm and bringing it off.

For stings inflicted by scorpions, four laurel-berries are taken in wine. Applied with oil, they are a cure for epinyctis, freckles, running sores, ulcers of the mouth, and scaly eruptions. The juice of the berries is curative of porrigo and phthiriasis; and for pains in the ears, or hardness of hearing, it is injected into those organs with old wine and oil of roses. All venomous creatures fly at the approach of persons who have been anointed with this juice: taken in drink, the juice of the small-leaved[64] laurel in particular, it is good for stings inflicted by them. The berries,[65] used with wine, neutralize the venom of serpents, scorpions, and spiders; they are applied also, topically, with oil and vinegar, in diseases of the spleen and liver, and with honey to gangrenous sores. In cases of lassitude and shivering fits, it is a very good plan to rub the body with juice of laurel-berries mixed with nitre. Some persons are of opinion that delivery is accelerated by taking laurel-root to the amount of one acetabulum, in water, and that, used fresh, it is better than dried. It is recommended

[62] "Irino." See B. xiii. c. 2.

[63] This assertion, Fée says, is untrue.

[64] See B. xv. c. 39.

[65] All these statements as to the properties of the berries, Fée says, are hypothetical and more than doubtful.

by some authorities, to take ten of the berries in drink, for the sting of the scorpion; and in cases of relaxation of the uvula, to boil a quarter of a pound of the berries, or leaves, in three sextarii of water, down to one third, the decoction being used warm, as a gargle. For head-ache, also, it is recommended to bruise an uneven number of the berries in oil, the mixture being warmed for use.

The leaves of the Delphic laurel[66] bruised and applied to the nostrils from time to time, are a preservative[67] against contagion in pestilence, and more particularly if they are burnt. The oil of the[68] Delphic laurel is employed in the preparation of cerates and the medicinal composition known as "acopum,"[69] and is used for fits of shivering occasioned by cold, for the relaxation of the sinews, and for the cure of pains in the side and the cold attacks in fevers.[70] Warmed in the rind of a pomegranate, it is applied topically for the cure of ear-ache. A decoction of the leaves boiled down in water to one third, used as a gargle, braces the uvula, and taken in drink allays pains in the bowels and intestines. The more tender leaves, bruised in wine and applied at night, are a cure for pimples and prurigo.

The other varieties of the laurel possess properties which are nearly analogous. The root of the laurel of Alexandria,[71] or of Mount Ida,[72] accelerates delivery, being administered in doses of three denarii to three cyathi of sweet wine; it acts also as an emmenagogue, and brings away the after-birth. Taken in drink in a similar manner, the wild laurel, known as "daphnoides" and by the other names which we have mentioned,[73] is productive of beneficial effects. The leaves of it, either fresh or dried, taken in doses of three drachmæ, in hydromel with salt, act as a purgative[74] upon the bowels.

[66] The Laurus nobilis of modern botany.

[67] A statement, Fée says, that is altogether illusory.

[68] Of the berries, Fée thinks.

[69] See c. 45 of this Book; also B. xxvii. c. 13.

[70] Fée thinks that this oil, in conjunction with adipose substances, might be useful for the treatment of rheumatic affections.

[71] The Ruscus hypophyllum of Linnæus. It is quite inodorous, Fée says, and has no analogous properties whatever with the next-mentioned plant.

[72] See B. xv. c. 39.

[73] In B. xv. c. 39.

[74] The peasantry of France, Fée says, still use as a purgative the berries

The wood, chewed, brings off phlegm, and the leaves act as an "emetic;" they are unwholesome, however, to the stomach. The berries, too, are sometimes taken, fifteen in number, as a purgative.

CHAP. 81.—MYRTLE; SIXTY OBSERVATIONS UPON IT.

The white[75] cultivated myrtle is employed for fewer medicinal purposes than the black one.[76] The berries[77] of it are good for spitting of blood, and taken in wine, they neutralize the poison of fungi. They impart an agreeable smell[78] to the breath, even when eaten the day before; thus, for instance, in Menander we find the Synaristosæ[79] eating them. They are taken also for dysentery,[80] in doses of one denarius, in wine: and they are employed lukewarm, in wine, for the cure of obstinate ulcers on the extremities. Mixed with polenta, they are employed topically in ophthalmia, and for the cardiac disease[81] they are applied to the left breast. For stings inflicted by scorpions, diseases of the bladder, head-ache, and fistulas of the eye before suppuration, they are similarly employed; and for tumours and pituitous eruptions, the kernels are first removed and the berries are then pounded in old wine. The juice of the berries[82] acts astringently upon the bowels, and is diuretic: mixed with cerate it is applied topically to blisters, pituitous eruptions, and wounds inflicted by the phalangium; it imparts a black tint,[83] also, to the hair.

of the Daphne mezereum, and of the Daphne laureola; and in Aragon and Catalonia, the leaves of the Thymelea are used for a similar purpose. The employment of them, however, is not unattended with danger.

[75] A variety with white berries, but which variety it appears impossible to say.

[76] See B. xv. c. 37.

[77] The leaves and berries are bitter, and rich in volatile oil.

[78] This is consistent with fact.

[79] A work of some kind, (perhaps a play, if the comic writer; Menander, is the person alluded to) the title of which means "the Women Dining together." Hardouin, with justice, ridicules the notion of Ortelius that this is the name of some place or town.

[80] The astringency communicated by the tannin which they contain would probably make them useful for dysentery; if at the same time, as Fée says, they are not too exciting, by reason of their essential oil.

[81] See B. xi. c. 71.

[82] "Succus seminis." Sillig has "succus feminis," apparently a misprint—the only one that has been met with thus far in his elaborate edition.

[83] It might change the colour of the hair, but for a short time only.

The oil of this myrtle is of a more soothing nature than the juice, and the wine[84] which is extracted from it, and which possesses the property of never inebriating, is even more so. This wine, used when old, acts astringently upon the stomach and bowels, cures griping pains in those regions, and dispels nausea.

The dried leaves, powdered and sprinkled upon the body, check profuse perspirations, in fever even; they are good, too, used as a fomentation, for cœliac affections, procidence of the uterus, diseases of the fundament, running ulcers, erysipelas, loss of the hair, scaly and other eruptions, and burns. This powder is used as an ingredient, also, in the plasters known as "liparæ;"[85] and for the same reason the oil of the leaves is used for a similar purpose, being extremely efficacious as an application to the humid parts of the body, the mouth and the uterus, for example.

The leaves themselves, beaten up with wine, neutralize[86] the bad effects of fungi; and they are employed, in combination with wax, for diseases of the joints, and gatherings. A decoction of them, in wine, is taken for dysentery and dropsy. Dried and reduced to powder, they are sprinkled upon ulcers and hæmorrhages. They are useful, also, for the removal of freckles, and for the cure of hang-nails,[87] whitlows, condylomata, affections of the testes, and sordid ulcers. In combination with cerate, they are used for burns.

For purulent discharges from the ears, the ashes of the leaves are employed, as well as the juice and the decoction: the ashes are also used in the composition of antidotes. For a similar purpose the blossoms are stripped from off the young branches, which are burnt in a furnace, and then pounded in wine. The ashes of the leaves, too, are used for the cure of burns. To prevent ulcerations from causing swellings in the inguinal glands, it will suffice for the patient to carry[88] a sprig of myrtle about him which has never touched the ground or any implement of iron.

[84] See B. xv. c. 37.

[85] Cerates, or adipose or oleaginous plasters.

[86] In reality they have no such effect.

[87] "Pterygia."

[88] Fée says here—"Pliny terminates, by a credulity quite unworthy of him, a Chapter, full of false or exaggerated assertions, relative to the properties of the myrtle."

CHAP. 82.—MYRTIDANUM: THIRTEEN REMEDIES.

We have already described the manner in which myrtidanum[89] is made. Applied in a pessary, or as a fomentation or liniment, it is good for affections of the uterus, being much more efficacious than the bark of the tree, or the leaves and seed. There is a juice also extracted from the more tender leaves, which are pounded in a mortar for the purpose, astringent wine, or, according to one method, rain-water, being poured upon them a little at a time. This extract is used for the cure of ulcers of the mouth, the fundament, the uterus, and the abdomen. It is employed, also, for dyeing the hair black, the suppression of exudations at the arm-pits,[90] the removal of freckles, and other purposes in which astringents are required.

CHAP. 83.—THE WILD MYRTLE, OTHERWISE CALLED OXYMYRSINE, OR CHAMÆMYRSINE, AND THE RUSCUS: SIX REMEDIES.

The wild myrtle, oxymyrsine,[91] or chamæmyrsine, differs from the cultivated myrtle in the redness of its berries and its diminutive height. The root of it is held in high esteem; a decoction of it, in wine, is taken for pains in the kidneys and strangury, more particularly when the urine is thick and fetid. Pounded in wine, it is employed for the cure of jaundice, and as a purgative for the uterus. The same method is adopted, also, with the young shoots, which are sometimes roasted in hot ashes and eaten as a substitute for asparagus.[92]

The berries, taken with wine, or oil and vinegar, break calculi[93] of the bladder: beaten up with rose-oil and vinegar, they allay head-ache. Taken in drink, they are curative of jaundice. Castor calls the wild myrtle with prickly leaves, or oxymyrsine, from which brooms are made, by the name of "ruscus"[94]—the medicinal properties of it are just the same.

Thus much, then, with reference to the medicinal pro-

[89] Or "myrtle-wine." See B. xiv. c. 19; also B. xv. c. 35.

[90] "Alarum perfusiones."

[91] See B. xv. cc. 7, 37: the Ruscus aculeatus of Linnæus, or little holly of the French, belonging to the Asparagea, and not the myrtles.

[92] Being of the same family, of course there is a great resemblance.

[93] In reality they have no such lithotriptic nature, Fée says.

[94] A kindred plant with the one already mentioned by our author: it is still used for making brooms in some parts of Europe.

perties of the cultivated trees; let us now pass on to the wild ones.

SUMMARY.—Remedies, narratives, and observations, nine hundred and eighteen.

ROMAN AUTHORS QUOTED.—C. Valgius,[1] Pompeius Lenæus,[2] Sextius Niger[3] who wrote in Greek, Julius Bassus[4] who wrote in Greek, Antonius Castor,[5] M. Varro,[6] Cornelius Celsus,[7] Fabianus.[8]

FOREIGN AUTHORS QUOTED.—Theophrastus,[9] Democritus,[10] Orpheus,[11] Pythagoras,[12] Mago,[13] Menander[14] who wrote the "Biochresta," Nicander,[15] Homer, Hesiod,[16] Musæus,[17] Sophocles,[18] Anaxilaüs.[19]

MEDICAL AUTHORS QUOTED. — Mnesitheus,[20] Callimachus,[21] Phanias[22] the physician, Timaristus,[23] Simus,[24] Hippocrates,[25] Chrysippus,[26] Diocles,[27] Ophelion,[28] Heraclides,[29] Hicesius,[30] Dionysius,[31] Apollodorus[32] of Citium, Apollodorus[33] of Tarentum, Plistonicus,[34] Medius,[35] Dieuches,[36] Cleophantus,[37] Philistion,[38] Asclepiades,[39] Crateuas,[40] Petronius Diodotus,[41] Iollas,[42]

1 See end of B. xx.
2 See end of B. xiv.
3 See end of B. xii.
4 See end of B. xx.
5 See end of B. xx.
6 See end of B. ii.
7 See end of B. vii.
8 For Fabianus Papirius, see end of B. ii.; for Fabianus Sabinus, see end of B. xviii.
9 See end of B. iii.
10 See end of B. ii.
11 See end of B. xx.
12 See end of B. ii.
13 See end of B. viii.
14 See end of B. xix.
15 See end of B. viii.
16 See end of B. vii.
17 See end of B. xxi.
18 See end of B. xxi.
19 See end of B. xxi.
20 See end of B. xxi.
21 See end of B. iv.
22 See end of B. xxi.
23 See end of B. xxi.
24 See end of B. xxi.
25 See end of B. vii.
26 See end of B. xx.
27 See end of B. xx.
28 See end of B. xx.
29 See end of B. xii.
30 See end of B. xv.
31 See end of B. xii.
32 See end of B. xx.
33 See end of B. xx.
34 See end of B. xx.
35 See end of B. xx.
36 See end of B. xx.
37 See end of B. xx.
38 See end of B. xx.
39 See end of B. vii.
40 See end of B. xx.
41 See end of B. xx.
42 See end of B. xii.

Erasistratus,[43] Diagoras,[44] Andreas,[45] Mnesides,[46] Epicharmus,[47] Damion,[48] Dalion,[49] Sosimenes,[50] Tlepolemus,[51] Metrodorus,[52] Solo,[53] Lycus,[54] Olympias[55] of Thebes, Philinus,[56] Petrichus,[57] Micton,[58] Glaucias,[59] Xenocrates.[60]

[43] See end of B. xi.
[44] See end of B. xii.
[45] See end of B. xx.
[46] See end of B. xii.
[47] See end of B. xx.
[48] See end of B. xx.
[49] See end of B. vi.
[50] See end of B. xx.
[51] See end of B. xx.
[52] See end of B. xx.
[53] See end of B. xx.
[54] See end of B. xii.
[55] See end of B. xx.
[56] See end of B. xx.
[57] See end of B. xix.
[58] See end of B. xx.
[59] See end of B. xx.
[60] See end of B. xx.

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